

Biases and Fundamental Investing Knowledge: An Assessment of College Students

Brian Porter

Abstract

Individuals are being forced to take a greater role in personal retirement planning. Until the mid 1970s, the predominant retirement plan was defined benefit, rather than defined contribution. Since the 1970s, there has been a move towards defined contribution retirement plans and, in the mid 1990s, defined contribution retirement plans outnumbered defined benefit retirement plans. From 1975 to 1998, there was an increase of 42 million Americans enrolled in non-Social Security retirement programs, from 44 million to 86 million. In 1975, the predominant plan was defined benefit with 32 million Americans participating in 103,000 different defined benefit plans. In contrast, 10 million Americans were participating in 208,000 different defined contribution plans. By 1998, the dominant plan had switched. Forty-six million Americans were in defined contribution plans and 40 million were in defined benefit plans (Migration News). Among Fortune 100 companies the shift is just as dramatic. In 2007, only 28% of Fortune 100 companies offered a defined benefit retirement plan to new employees, compared with 89% in 1985 (Geisel, 2008).

The trend away from defined benefit to defined contribution plans is also evident in respect to the total dollars invested in each of the plans. In 1990, institutional ownership of private defined benefit retirement plans had total assets of \$900 billion compared with defined contribution plans with total assets of only \$727 billion. By 2004, defined contribution plans had significantly more assets with a total of \$2.636 trillion compared with defined benefit plans with total assets of only \$1.811 trillion (Federal Reserve Flow of Funds).

Four observations are evident. First, assets in both retirement plans have substantially increased. Second, the trend is clearly away from defined benefit plans and to defined contribution plans. Third, because of this trend, individuals have a greater responsibility in investing and planning decisions. Four, it is vital that individuals have a basic understanding of fundamental investing and financial concepts (e.g., efficient market theory) and psychological biases pertaining to investing.

This paper will look at previous research on investor psychology and the biases that exist. There are certain tendencies that may be detrimental to investment decisions. It has also been found that there are sometimes differences between males and females in regards to investor behavior. Previous research has found that young people lack adequate broad based financial skills, but it has not focused on specific psychological biases or fundamental investing concepts. Research that has addressed biases, has not specifically studied different subgroups of college students.

Extensions of prior research are performed in this research. A survey was conducted that studies the perceptions, knowledge, and biases of college students. The survey respondents are both male and female and have various college majors. Approximately forty percent of the sample has taken a college course in finance.

This study fills the gap that currently exists in this area and advances this body of knowledge in four important ways. One, it extends prior research pertaining to investor psychology and studies its applicability for individual investors. Two, it examines college students, a significant demographic group that is impacted by the necessity to make investment decisions, and compares their tendencies with previous research. Three, it reexamines and assesses college students' comprehension of fundamental financial investing concepts. Four, it compares possible biases on three factors: (1) gender, (2) college major, and (3) exposure to a college course in finance.

I. Introduction and Prior Research

As defined contribution retirement plans, rather than defined benefit retirement plans, become the norm, the number of people investing for retirement, continues to grow. As such, it is essential that individuals have a solid foundation in finance and investing. In addition, it is also vital that individuals have an understanding of their own psychological investing biases and tendencies. Most academics advocate the efficiency of markets and acknowledge that there are certain overriding principles of financial markets. John Bogle, founder and former CEO of the Vanguard mutual fund group writes that it is often ignored that "the value of a corporation is neither more nor less than the discounted value of its future cash flow, not only a point endorsed by wise oracles but a mathematical certainty" (Bogle, p. 69). For individuals that must make investment decisions, what is their level of understanding of fundamental financial principles such as this? Further, how well do investors understand their own emotional biases in regards to investing? Are the answers to these two questions different among subgroups of investors?

There is little research pertaining to college students and their understanding of financial investing fundamentals, such as the efficiency of markets and the necessity to invest for the long run. There is also little research that specifically assesses subgroups of college students and their psychological biases in regards to investing. Prior research has examined college students' knowledge of finance in general. Research has also looked at psychological biases of established investors. Prior research indicates that the majority of college students are financially illiterate. Chen and Volpe (1998) conducted a financial literacy questionnaire to college students and found that students incorrectly answered 47% of the questions. Although different subgroups were examined (e.g., class rank, work experience, age), no subgroup correctly answered more than 65% of the questions. Volpe, Chen, and Pavlicko (1996) also find that college students do not have adequate knowledge of certain personal investment concepts. A study by Chen and Volpe (2002) finds that, on average, women know less about personal finance than men. Chen and Volpe encourage future research to "focus on how to improve both women and men's knowledge of personal finance and their ability to handle personal finances."

A few research studies examine college students' skills in specific financial areas. Understanding of credit cards and credit card involvement has been studied (Palmer et al, 2001; Warwick and Mansfield, 2000). Retirement planning research has typically studied workers already in their careers. Bajtelsmit et al. (1999) find that working women, compared with working men, exhibit greater relative risk aversion in their allocation of wealth into defined contribution pension assets. Though it is useful to study the retirement planning knowledge and behavior of workers, such as post-college graduates, it is equally vital to research younger people, such as college students. Delaying retirement planning, or uninformed retirement

decisions in early years, has detrimental implications on retirement savings. Therefore, it is critical to evaluate and improve retirement and investing knowledge at an early age.

Psychological biases and tendencies have been explored by several researchers. Kahneman and Riepe summarize three decades of research on judgment, decision-making, and regret. They then apply this research to investor behavior and offer suggestions for professional financial advisors. One such behavior that they describe is overconfidence, and argue that this overconfidence is particularly strong with investors. This concurs with early research, such as by Peters and Waterman, in their book *In Search of Excellence*, where they found that men tend to be overconfident. Peters and Waterman asked a random sample of males to rank themselves on certain attributes. Every man in the sample ranked himself as being above average in getting along with others. Ninety-four percent of the male respondents thought their athleticism was above average (Peters and Waterman, 1988).

Barber and Odean (2001) did an extensive empirical analysis of common stock investing behavior, examining account data for over 35,000 households from a large discount brokerage. They find that men trade 45 percent more than women, and that this frequent trading reduces men's net returns by 2.65 percent per year as compared with 1.72 percent for women. Subsequent research by Barber and Odean (2002) show that when investors switch to online trading they trade more frequently, more speculatively, and less profitably than before the switch. Contrary to previous research, Dittrich et al. (2005) found that in some investing situations, males are less prone to overconfidence than females.

II. Research Description

Prior research has examined psychological tendencies and investor biases. It has also studied basic investing knowledge of college students. Absent, in the literature, is an examination of college students' investing behavior and biases along subgroups. Also missing is an assessment of college students' knowledge of fundamental financial and investing concepts, such as the efficiency of markets. This research fills this gap and examines these important issues. A survey was conducted of college students across various subgroups of major, gender, and exposure to finance. College students are an ideal population to study for at least two reasons. First, they are a large demographic group that will be forced to make investment and financial decisions as they enter the job market. Second, it is imperative that college students begin investing immediately. On a whole, this population, more than the generation that preceded it, will work in jobs that have defined contribution, rather than defined benefit retirement plans, and will be forced to make investing decisions that directly impact their financial future. Two important predictors of future wealth for these students are when they begin investing and how much they invest. According to Burton Malkiel, author of *A Random Walk Down Wall Street*,

The single most important thing you can do to achieve financial security is to begin a regular savings program and to start it as early as possible. The only reliable route to a comfortable retirement is to build up a nest egg slowly and steadily. Yet few people follow this basic rule, and the savings of the typical American family are woefully inadequate. It is critically important to start saving now. (Malkiel, p. 278)

Thus, it is critical that college students understand financial concepts, begin investing early in their career, and are aware of their psychological biases and tendencies.

A copy of the survey is provided in Table I. The objective of the survey is to evaluate college students' psychological biases, specifically in investing. The survey also assesses college students' understanding of basic financial investing concepts. Three factors are examined: (1) gender, (2) major, and (3) having taken a course in finance. The results of the survey will be analyzed. Areas will be identified that need to be addressed so that this large demographic of individuals can be more informed, and hopefully more successful, as they make investment decisions, such as for their defined contribution retirement accounts.

III. Discussion of Results

Two aspects of the results will be discussed. First, observations of the total means for each question will be examined. Overall means, with standard deviations, for each question by subgroup and total, is given in Table II. The second discussion of the results will be of significant differences between subgroups. Table III provides a summary of the one-way analysis of variance (ANOVA) for each of the three factors. Table III identifies significant differences ($p < 0.05$ level) within subgroups in bold and underline.

Means

Questions one through four examine the confidence of students. Question one is a non-financial general confidence question confirming prior research that 80% of drivers believe they are above average, a mathematical impossibility (Kahneman and Riepe, 1998). Interestingly, college students, a high risk driving group without many years of driving experience, clearly feel that they are above average drivers, relative to other drivers (4.01 on 5 point scale). Again, it is mathematically unlikely for the majority of college drivers to be above average compared with all drivers.

Questions two, three, and four examine whether or not self-confidence carries over to investing. Although none of the responses indicate a self confidence as high as driving, all three responses indicate that students, on a whole, think of themselves as above average investors. This is strongest for two attributes—students consider themselves above average at managing money (3.87) and they anticipate future investment returns that are above average (3.71). Students consider themselves to have a knowledge of stocks that is only slightly above average (3.10).

Questions five through eight examine students' perception at picking "winning" and "losing" stocks. It is useful to compare question five, that asks about a "winning" stock (New Oriental Education—EDU) with question seven, that asks about a "losing" stock (Countrywide Financial Corporation—CFC). On a whole, students report that they are no more, or less, likely to have bought EDU, a "winning" stock (3.02) prior to its increase in price. However, students believe that they would have been less likely to have bought CFC, a "losing" stock (2.43) prior to its decrease in price. Questions six and eight indicate that students are now much less inclined to buy EDU (1.93) a "winning" stock that has increased significantly in price. But students are

no more, or less, likely to now purchase CFC (3.06), a “losing” stock that recently decreased significantly in price.

Questions nine, ten, and eleven examine students’ confidence in the stock market in general. Students are told the current value of the S&P 500 is 1500 and they are asked to estimate a high, low, and most likely value of the S&P 500 one year from today. In question nine, students estimate that the S&P 500 will mostly likely increase by 16% to 1739. In questions ten and eleven, students estimate the highest possible value for the S&P is 5098 (an increase of 240%) and the lowest possible value for the S&P 500 is 1011 (a decrease of decrease of 33%). Two observations can be made of students as a whole. First, their estimates are often unrealistic, particularly to the upside. Second, students are overly confident and optimistic about the stock market.

Questions 12 and 13 examine a students’ propensity for risk and adversity to loss. Question 12 presents students with a 50% chance of losing \$100 and a 50% chance of winning an unknown amount. Students, on a whole, required a 50% chance to win \$338 to offset the 50% to chance to lose \$100. Students have a strong adversity to losing, demanding over three times the \$100 amount simply to breakeven. However, in question 13, students are given a 50% chance of winning \$1000 with a 50% chance of winning nothing. Though the expected outcome of this game is \$500, students required \$889 to forego the 50% probability of winning \$1000. Students are more willing to take on risk when it entails the possibility of a gain, and less willing to take on risk when it might result in a loss.

Subgroup Differences

Table III provides a summary of the one-way analysis of variance (ANOVA) for each of the three factors, with significant differences ($p < 0.05$ level) within subgroups identified with bold and underline. An overall observation is that there are only three significant differences for *course in finance*, five significant differences for *major*, and seven differences for *gender*. Earlier research (e.g., Barber and Odean, 2001) also indicates that *gender* is significant for adult investors. Earlier research has not extensively studied college students. This research indicates that *gender* differences also exist at the college level.

For *course in finance*, the ANOVA indicates that there is a significant difference for questions three, four, and eleven. Question three and four indicate that students that have taken a course in finance are more likely to think they have a better understanding of stocks than their peers ($p = 0.000$) and that their future investment returns will be above average ($p = 0.011$). Question 11 indicates that students that have taken a course in finance are more confident that the overall stock market will not experience a significant drop in value ($p = 0.009$). Students that have taken a course in finance, compared with those that have not, anticipate that in the upcoming year the S&P 500 will decrease, at most, by 13% and 44%, respectively.

For *gender*, questions one, two, three, four, six, eight, and thirteen all indicate significant differences. Questions one through four, which examine confidence, all indicate that males are more confident than females. Males, compared with females, think that they are better drivers ($p = 0.001$), are better at managing money ($p = 0.046$), have a better knowledge of stocks ($p = 0.002$), and will have higher future investment returns ($p = 0.000$). Question six indicates that

males are less likely ($p = 0.011$) to purchase a “winning” stock that has experienced a significant run-up in price. However, question eight indicates that males are more likely ($p = 0.032$) to buy a “losing” stock that has experienced a significant decrease in price. On the other hand, question 13 shows that males are more likely to accept a lower guaranteed amount rather than take a chance on winning a higher amount ($p = 0.000$).

For *major*, questions two, three, four, eight, and thirteen indicate significant differences. Questions two, three, and four, show that business majors are more confident about investing. Business majors, compared with non-business majors, think that they are better at managing money ($p = 0.001$), have a better knowledge of stocks ($p = 0.000$), and will have higher future investment returns ($p = 0.015$). Based on question eight, business majors are more likely ($p = 0.049$) to purchase a “losing” stock that has experienced a significant decrease in price. Question 13 indicates that business majors are more likely to accept a lower guaranteed amount rather than take a chance on winning a higher amount ($p = 0.024$).

IV. Conclusion

Until recently, pensions that did exist were predominately defined benefit. However, the pendulum has swung in the other direction and now defined contribution plans outnumber defined benefit plans. This shifts responsibility to individuals and with this responsibility is a need to understand retirement planning and investing. A survey was created to assess the investing behavior and biases of college students. This demographic is critical for at least two reasons. One, it is highly impacted by the shift to defined contribution plans. Two, retirement planning must begin early in one's career.

It was found that students, similar to adults, are highly confident. On a whole, they think of themselves as better than average drivers and investors. Naturally, this is infeasible. A group, as a whole, relative to the individuals within that same group, must be average. Some individuals are above average, some individuals are below average, but the group, as a whole, is average. Overall, it was also found that students are irrationally overconfident about the stock market. As a group, students think that the upside potential of the stock market is very high, but students' downside assessment of the stock market is more realistic.

The research also found significant differences between subgroups. Three factors were examined: 1. Taken a course in finance; 2. Gender; and 3. Major. Gender proved to be the factor with the most significant differences. Males, compared with females, are more confident of their driving and investing ability. This is also true for students that have taken a course in finance and major in business; both groups are more confident.

This is seminal research in assessing the investing behavior and biases of college students. A continuation of this study would be to research further these behaviors and biases of students. An increased understanding of these biases would help students improve their future investing decisions, particularly for retirement planning. One possible application of this research would be for all finance courses to include a module on behavioral finance. A better understanding of one's investing behavior and biases would help one to make better choices. For example, if a male has a tendency to be unrealistically overconfident, he can force himself to be less aggressive in his investing. The reverse might be true for a female. A female, knowing her

tendency to be less confident, might want to be a bit more aggressive with her investing. A second possible application of this research would be to offer a basic finance and personal investing course, which includes behavioral finance, for non-business majors. Because of its importance, a course such as this could be required of all students. Although a student may not major in business, there are fundamental financial concepts, including one's behavior and biases, which all students need to understand.

Table I
Questionnaire Given To Students

Answer the following personal information questions:

- (a) Have you taken a Finance Course? No Yes
(b) Gender: Male Female
(c) Major: Business Non-Business

Respond to questions 1 to 4 based on the following scale:

- | | | | | | | | | |
|--|---------------|---|---|---|---|---|---------------|--|
| | Below Average | 1 | 2 | 3 | 4 | 5 | Above Average | |
|--|---------------|---|---|---|---|---|---------------|--|
1. Compared with the average person that you encounter on the road while driving, your driving ability is:
 2. Compared with the average person in your peer group, your ability to manage money is:
 3. Compared with the average person in your peer group, your knowledge of stocks and investing is:
 4. In the future, when you make investment decisions, do you anticipate that your investments will yield a return that is:

Respond to questions 5 to 8 based on the following scale:

- | | | | | | | | | |
|--|--------------|---|---|---|---|---|----------|--|
| | Not Purchase | 1 | 2 | 3 | 4 | 5 | Purchase | |
|--|--------------|---|---|---|---|---|----------|--|
5. On September 25, 2006, the stock of New Oriental Education and Technology Group was selling for \$24.20. Today it has increased in value to \$90.26. If you were investing in the stock market (and you had known about New Oriental Education) what do you think is the likelihood that you would have purchased New Oriental Education stock when it was selling for \$24.20?
 6. Now that you are aware of New Oriental Education, if you were investing in the stock market today, what is the likelihood you would purchase New Oriental Education stock at \$90.26?
 7. On May 8, 2006, the stock of Countrywide Financial Corporation was selling for \$42.40. Today it has decreased in value to \$16.63. If you were investing in the stock market (and you had known about Countrywide Financial Corporation) what do you think is the likelihood that you would have purchased Countrywide Financial Corporation stock when it was selling for \$42.20?
 8. Now that you are aware of Countrywide Financial Corporation, if you were investing in the stock market today, what is the likelihood you would purchase Countrywide Financial Corporation at \$16.63?

Table I (Continued)

Answer Questions 9 through 13 by placing your answer in the blank

9. The S&P 500 index is a valuation of the overall stock market. **Currently, the S&P 500 index is at 1500.** What is your best estimate of the S&P 500 index one year from today?
Best estimate for S&P 500 = _____
10. Now, pick a high value for the S&P 500 index one year from today. That is, pick a high value that you are 99% sure (but not absolutely sure) that the S&P 500 will be lower than this value one year from today.
High value for S&P 500 = _____
11. Now, pick a low value for the S&P 500 index one year from today. That is, pick a low value that you are 99% sure (but not absolutely sure) that the S&P 500 will be higher than this value one year from today.
Low value for S&P 500 = _____
12. You have the possibility to play the following game: A coin is flipped. If the coin comes up heads, you lose \$100. If it comes up tails, you win a certain amount. What is the minimal amount that you must win when it comes up tails so that you would play this game?
\$ _____
13. You have the possibility to choose one of two alternatives (you must choose one of the alternatives):

Alternative 1: A coin is flipped. If it comes up heads, you win \$1,000. If it comes up tails, you win nothing.
Alternative 2: You receive a guaranteed certain amount

What is the minimal amount that you must be guaranteed so that you would choose Alternative 2 rather than Alternative 1?
\$ _____

Table II
Means for Questions 1-8

		Q1 DRIV	Q2 MMN	Q3 KNW	Q4 YLD	Q5 BEDU	Q6 NEDU	Q7 BCWF	Q8 NCWF
COURSE FINANCE									
Yes	Mean, N=57	4.07	4.04	3.79	3.91	3.19	1.77	2.42	3.25
	Std. Dev	.704	.755	.921	.830	1.043	.907	.999	1.229
No	Mean, N=93	3.98	3.78	2.67	3.59	2.92	2.02	2.42	2.92
	Std. Dev	.78	.867	1.070	.694	1.020	.989	.929	1.102
GENDER									
Male	Mean, N=90	4.13	3.99	3.37	3.91	2.97	1.76	2.38	3.19
	Std. Dev	.753	.759	1.075	.729	1.022	.825	.924	1.096
Female	Mean, N=61	3.82	3.70	2.70	3.40	3.11	2.18	2.49	2.85
	Std. Dev	.719	.910	1.138	.712	1.045	1.088	.994	1.223
MAJOR									
Bus	Mean, N=113	4.04	4.00	3.36	3.79	3.08	1.95	2.51	3.16
	Std. Dev	.767	.776	1.017	.746	1.045	1.007	.959	1.158
Other	Mean, N=38	3.92	3.50	2.32	3.45	2.86	1.87	2.18	2.74
	Std. Dev	.712	.893	1.165	.760	.979	.811	.896	1.107
Total	Mean, N=151	4.01	3.87	3.10	3.71	3.02	1.93	2.43	3.06
	Std. Dev	.753	.833	1.146	.762	1.030	.960	.951	1.157

Means for Questions 9-13

		Q9 S&P	Q10 HS&P	Q11 LS&P	Q12 L100	Q13 GAL2
COURSE FINANCE						
Yes	Mean, N=57	1928	3292	1303	473	848
	Std. Dev	1960	4356	1535	1347	927
No	Mean, N=93	1619	6228	842	253	914
	Std. Dev	409	23423	475	215	1063
GENDER						
Male	Mean, N=90	1809	6449	1112	242	618
	Std. Dev	1551	23565	1278	290	426
Female	Mean, N=61	1627	2975	851	480	1275
	Std. Dev	548	2425	412	1312	1409
MAJOR						
Bus	Mean, N=113	1786	5728	1086	374	783
	Std. Dev	1430	21237	1159	988	750
Other	Mean, N=38	1591	3134	783	226	1218
	Std. Dev	394	2176	472	199	1536
Total	Mean, N=151	1739	5098	1011	338	889
	Std. Dev	1262	18520	1039	865	1011

Table III
ANOVA SUMMARY

Question	Course In Finance				Gender			
	Sum of Squares	D F	F	Sig.	Sum of Squares	D F	F	Sig.
Q1-DRIV	.297	1	.525	.470	8.179	1	7.88	.001
Q2-MMN	2.211	1	3.236	.074	4.245	1	2.123	.046
Q3-KNW	44.127	1	42.763	.000	16.454	1	6.749	.002
Q4-YLD	3.762	1	6.718	.011	9.445	1	8.996	.000
Q5-BEDU	2.646	1	2.502	.116	4.623	1	2.213	.113
Q6-NEDU	2.201	1	2.396	.124	8.126	1	4.623	.011
Q7-BCWF	000	1	.001	.982	.576	1	.316	.730
Q8-NCWF	3.518	1	2.652	.106	9.122	1	3.522	.032
Q9-S&P	3252380	1	2.044	.155	1158483	1	.361	.698
Q10-HS&P	2.92E+08	1	.844	.360	4.29E+08	1	.622	.539
Q11-LS&P	7222561	1	6.970	.009	2841480	1	1.322	.270
Q12-L100	1637143	1	2.196	.141	1959365	1	1.317	.271
Q13-GAL2	152293	1	.148	.701	15494137	1	8.343	.000

Question	Major			
	Sum of Squares	D F	F	Sig.
Q1-DRIV	.372	1	.655	.420
Q2-MMN	7.109	1	10.920	.001
Q3-KNW	30.913	1	27.756	.000
Q4-YLD	3.378	1	6.010	.015
Q5-BEDU	1.432	1	1.352	.247
Q6-NEDU	.175	1	.189	.664
Q7-BCWF	2.997	1	3.365	.069
Q8-NCWF	5.182	1	3.948	.049
Q9-S&P	1000224	1	.627	.430
Q10-HS&P	1.78E+08	1	.518	.473
Q11-LS&P	2483425.7	1	2.322	.130
Q12-L100	582837	1	.779	.379
Q13-GAL2	5156018	1	5.192	.024

References

- Bajtelsmit, V., Bernasek, A., and Jianakoplos, A., "Gender Differences in Defined Contribution Pension Decisions," *Financial Services Review*, No. 8, 1999, pp. 1-10.
- Barber, B. and Odean, T., "Boys Will Be Boys: Gender Overconfidence, and Common Stock Investment," *The Quarterly Journal of Economics*, February 2001, pp. 261-292.
- Barber, B. and Odean, T., "Online Investors: Do The Slow Die First?," *The Review of Financial Studies*, Vol. 15, No. 2, 2002, pp. 455-487.
- Bogle, J., *The Battle For the Soul of Capitalism*, Yale University Press, 2005.
- Chen, H., and Volpe, R., "An Analysis of Personal Financial Literacy Among College Students," *Financial Services Review*, 1998, Vol. 7, No. 2, 1998, pp. 107-128.
- Chen, H., and Volpe, R., "Gender Differences in Personal Financial Literacy Among College Students" *Financial Services Review*, Vol. 11, 2002, pp. 289-307.
- Dittrich, D.A., Werner, G., and Maciejovsky, B., "Overconfidence in Investment Decisions: An Experimental Approach," *The European Journal of Finance*, Vol. 11, No. 6, December 2005, pp. 471-491.
- Federal Reserve Flow of Funds Accounts of the United States,
<http://www.federalreserve.gov/releases/z1/>
- Geisel, J. "Defined-Benefit Plans Falling Further Out of Favor, Survey Finds," *Financial Week*, May 22, 2008,
<http://www.financialweek.com/apps/pbcs.dll/article?AID=/20080522/REG/205713784/1036>
- Kahneman, D. and Riepe, W., "Aspects of Investor Psychology," *The Journal of Portfolio Management*, Summer 1998, pp. 52-65.
- Malkiel, B., *A Random Walk Down Wall Street*, W.W. Norton & Company, Inc., 2007.
- Migration News, http://migration.ucdavis.edu/MN/more.php?id=2344_0_5_0
- Palmer, T., Pinto, M., and Parente, D., "College Students' Credit Card Debt and the Role of Parental Involvement: Implications for Public Policy," *Journal of Public Policy & Marketing*, Vol. 20, Spring 2001, pp. 105-113.
- Peters, T., and Waterman, R., *In Search of Excellence*, Grand Central Publishing, 1988.
- Volpe, R., Chen, H., and Pavlicko, J., "Personal Investment Literacy Among College Students: A Survey," *Financial Practice and Education*, 1996, Vol. 6, No. 2, pp. 86-94.
- Warwick, J., and Mansfield, P., "Credit Card Consumers: College Students' Knowledge and Attitude," *Journal of Consumer Marketing*, December 2000, Vol. 17, No. 7, pp. 617-626.