

## **Changes in Student Attitudes toward the Market System and the Introductory Microeconomics Course**

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There are numerous research findings supporting the proposition that cultural values and attitudes are associated with the economic prosperity of a country (Harrison, 1992; Sowell, 1994; Lal, 1998). These findings suggest a possible important role for values and attitudes in the teaching and learning of economics. Traditionally, however, values and attitudes are scarcely acknowledged in economics instruction at the introductory or intermediate level. The economic paradigm presented in class is based on “positive economics” and we see our roles as educators as promoting development of cognitive and objective understanding of the workings of the market primarily based on neo-classical assumptions, tenets and models. The influence of values, attitudes and beliefs is often relegated to other social sciences. Becker (1983) was one of the first researchers in economic education to point out that there was a need to explore the “affective domain” of economics. Subsequent research reported development of several instruments to assess the impact of attitudes (Soper and Walstad, 1983; O’Brien and Ingles, 1987; Breeden and Lephardt, 1993, 2005). Other research focused on the assessment of attitudes based on content-specific cases of economic behavior such as pricing (Seligman and Schwartz, 1997), change of attitudes as the result of taking an economics course (Whaples, 1995), and the differences in attitudes between demographic subgroups, changes in attitudes of principles classes over time and the impact of pro-market attitudes on grades in principles of economics (Breeden and Lephardt, 2002).

Although the principal goal of the Introductory

Microeconomics course is to impart objective, “positive” knowledge about the principles that animate decision making of economic actors generally in the market economy, there is a suspicion among those teaching the course that attitudes toward the market system also change. In the results reported here, we attempt to measure the impact that Introductory Microeconomics has on the attitudes of university introductory microeconomics students. We test the presumption that attitudes of introductory economics students will become more “pro-market” as a result of the experience of an introductory microeconomics class and note some of the interesting differentials in attitude changes of demographic groups.

### **Background**

Over the last 13 years, we have developed a twenty-two question survey, the Market Attitude Inventory (MAI), that assesses attitudes toward the market system. See Breeden and Lephardt (2005, forthcoming) for testing of norming and validity of the instrument. We have administered this instrument to university students at various levels, to high school students, to high school teachers in Wisconsin and to teachers attending economic education workshops. In prior research we have reported on the attitudes toward the market system shown by students at different levels of instruction, principles vs. intermediate vs. MBA students, and noted the marked differences in attitudes (see Breeden & Lephardt, 2002, at Table 4). In comparing the mean attitudes of principles of economics students with MBA students, for example, the considerable higher level of “pro-market” sentiment of the MBA students cannot be taken solely as the result of education. It is reasonable to assume that business majors will be more pro-market in orientation than lower division students who have yet to select a major or college. Students working full-time in business can be expected to be more pro-market than business majors. The self-selecting nature of each of these samples makes it impossible to draw the conclusion that economics instruction alone makes students’ attitudes more

“pro-market.”

In this study, we perform a true “pre-post” measure of the change in attitudes of a group of Principles of Microeconomics students over the course of a semester. We administered the MAI instrument to four separate Principles of Microeconomics classes in the fall semester of 2003. The classes consisting of one large section of 133 students taught by a male instructor (final N=99) and three small sections with 48 students each taught by a female instructor (final N=119). From an original beginning of semester student population of 277, our final pre-post attitude sample size was 214 due to drops, transfers, and incomplete responses. Our final sample consisted of 90 male and 124 female undergraduate students who fully completed the pre-post survey.

### **Pre-Semester Attitudes Toward the Market System**

The Pre-Semester Attitudes presented in Table I show mean scores on the zero-to-one hundred point scale of “Absolute disagreement” to “Absolute agreement” for the Principles of Microeconomics students for both pre- and post-semester. The general range and average of scores pre-semester was consistent with previous measures of comparable student groups. Question 22 (“Overall and in summary, I believe that the market system in the US is a fair and ethical system”) gathered a mean agreement score, all students at beginning of semester, of 63.9%. This apparent support for the “fairness” of the market among young college students is consistent with our prior research and the findings of Whaples (1995). It is also consistent with the findings of Baker (2005) who disputes the idea of a polarized distribution of values in American society and finds a relative consensus on the traditional/secular-rational values dimension. However for context, it should be noted that this level of support is well below the mean for a separate survey of graduate MBA students of 79.1% (sample taken Fall, 2001).

### **Pre-semester Attitudes and Gender of students**

Consistent with previous findings, we found that a means test

Table I. Principles of Microeconomics Beginning and Ending Attitudes

Table 1: Beginning Attitudes	Principles of Micro Students Fall, 2003 N = 214 PRE-SEMESTER Mean % Agreement	Principles of Micro Students Fall, 2003 N = 214 POST-SEMESTER Mean % Agreement
In my opinion, the market system in the US.....		
1. leads to unfair distribution of income	48.4	46.7
2. rewards people fairly for their productivity and hard work	58.8	63.4*
3. encourages unethical business behavior	53.5	51.6
4. leads to quality and technical advances in products and services	79.0	82.1*
5. leads to inadequate amounts of important public services (police, roads, preventative health care )	42.0	43.2
6. provides opportunities and incentives for success	78.2	78.7
7. encourages greed and excessive materialism	69.2	66.7
8. allows equal access to work opportunities	46.9	45.2

9. leads to erratic cycles of growth and decline in economic activity	53.8	49.1*
10. raises the living standard for most people	62.9	63.8
11. leads to monopoly power among businesses	57.8	48.0**
12. leads to efficient use of resources	48.4	57.3**
13. encourages the abuse of the environment	54.2	58.5
14. leads to unemployment and worker insecurity	49.5	47.6
15. leads to excessive risk of business failure	49.3	47.2
16. requires a lot of government control to be efficient	45.1	43.9
17. allows too much foreign competition	42.1	40.0
18. provides consumers the goods and services they want	76.0	80.9**
19. provides employment opportunities for all those who desire	59.4	55.1
20. encourages innovation and entrepreneurship	75.6	77.1
21. provides goods and services at an affordable price	61.5	65.6*
22. Overall and in summary, I believe that the market system in the US is a fair and ethical system	63.9	68.6*
Difference significant at 95% indicated by *; 99% by **		

based on gender gave a statistically significant difference in pre-semester responses to question #22, overall fairness of the market. This is shown in Table II under the column of "Pre-semester." The mean pre-semester scores for the overall "fairness of the market" question for males was 69.4% and for females was 58.3%. This difference is significant at the 99% level. Examining other demographic and background characteristics of this sample failed to find any significant differences in responses to summary question 22 at the beginning of semester. The other characteristics examined included age, financial aid, GPA, academic major, public/private high school, ACT score, high school Economics course, race, religion, part-time work, and citizenship.

### **Pre-Post Changes in Attitudes Toward the Market System:**

The end-of-semester administration of the MAI instrument produced the mean scores shown in the second column of Table I. There was a significant change in the summary question of market fairness in the direction of the students" being more "pro-market" after having experienced the semester of instruction in Principles of Microeconomics. This is of course presuming that no outside influences produced the changes. On a question-by-question basis, some interesting results were found as shown in Table I. Employing a standard t-test for significant differences between means, there were eight questions showing significant changes in attitudes at the 95% level with three showing significance at a 99% level of confidence.

At course's end, students indicated significantly greater agreement with the statements that the market "rewards work fairly," "leads to advances in products," "leads to efficient use of resources," "provides goods and services wanted at affordable prices," and "is a fair and ethical system." The end-of-semester responses indicated less agreement with the propositions that the market "leads to erratic cycles" and "leads to monopoly power." It was noteworthy that all eight of the significant changes in agreement were in the direction of the students" being more pro-market at semester end. This reinforces our belief in the existence of a "values" component of instruction, intended or not.

Whether the change is produced by the standard course content, the particular book(s) used by the two instructors, or the values and attitudes (or for that matter, teaching styles) of the two instructors is not determined by our tests. It is beyond dispute however that the group of students as a whole indicated attitudes more pro-market at the end than at the beginning of the semester.

### **Change in Attitude and the Gender of Instructor and Student**

It was clear that overall in the four sections of Principles of Microeconomics there was a statistically significant change in attitudes of students in the direction of more pro-market, and it was also clear that a statistically significant difference existed in attitudes between males and females at the beginning of the semester (difference in overall fairness question administered initially was significant at 99% level). When we examined more closely the attitudes and changes in attitudes, we found several interesting results.

- The mean score for percent agreement with the overall market fairness question for males did not change significantly pre to post (69.4% to 70.1%). The change in attitudes for females on the overall fairness question changed significantly (58.3% to 66.9%).
- Further, on a more detailed inspection of the changes in attitudes across sections of the two instructors, we found that all the change in attitudes among females was achieved in the sections taught by the female instructor. The male instructor had no statistically significant impact on attitudes of either males or females. The female instructor had no impact on attitudes of males (71.7% to 71.6%), but had a profound impact on attitudes of females.

- While a strong difference existed in the overall fairness measure between males and females in the classes of the female instructor at the start of semester (means agreement were 71.7% vs. 57.6%), at the end the percent agreement scores were not significantly different (71.6% for males and 70.78% for females).

Table II. Pre- and Post-Course Responses  
Mean Percent Agreement with Question #22:

*“Overall and in summary... the market system... is a fair and ethical system”*

<b>Total Student Sample:</b>	Pre	Post	N =
All students	63.8	68.6*	214
Male students	69.4	70.1	90
Female students	58.3	66.9*	124
<b>Male Instructor Sample:</b>			
All students	62.3	64.7	95
Male students	65.7	68.0	40
Female students	59.3	61.8	45
<b>Female Instructor Sample:</b>			
All students	65.2	71.2*	119
Male students	71.7	71.6	50
Female students	57.6	70.78*	69
Differences significant at 95% indicated by *.			

Precisely what propelled this differential impact based on students' gender is not certain. It could be the gender of instructor, or the format of the class (male: one large section, female: three initial sections of 48 students each). It could be the text used by the two instructors (male: McEachern, female: Mankiw), the personal philosophies and attitudes toward the market of the two instructors, or their teaching styles. We have no evidence that would allow us to do more than speculate on the extreme differential impact of gender of instructor on attitudes but we think the finding is an important one. The obvious but unsupported speculation is that gender of instructor does matter. Another possibility suggesting itself is that ideology of instructor matters as the female instructor is more pro-market than the male instructor. Both instructors completed the 22-question MAI instrument, with the female instructor's answer to the overall fairness question significantly higher than the male's.

### **A Regression Model of Attitude Change**

We also performed a regression test of changes in attitudes by constructing a "change in attitude" variable as the difference between the pre-course responses on question 22 (the overall fairness question), and the end-of-course response to that same question. Table III shows the results of that regression model. Explanatory variables consisted of the demographic characteristic variables collected at beginning of semester. Our selection of demographic and personal characteristic measures was guided by our previous research and reflected our intuitions. Some characteristics, for example "public or private high school" or "high school economics course", could have obvious links to student attitudes although in this study no effects were found.

In the previous inquiry into changes in students' attitudes as a result of an introductory economics class (Whaples, 1995), the sample was limited to students without a high school economics course and had only a limited survey of demographic characteristics. Of our demographic variables, male was a significant negative variable in the

change model. This is understandable given the initial attitudes of males that were markedly more pro-market than females and the dramatic change in attitudes of females. Financial aid was significant and negative as those on financial aid showed only an average change in the direction of more pro-market of 6.9 % agreement compared to those not on financial aid. There was also an effect on attitude change shown by the gender of instructor. Students in the class of the male instructor showed a gain in summary attitudes percent agreement of 5.2 points less than students in the female instructor's class.

### **Attitudes and Final Course Grade**

Finally we developed a regression model to explain final course grade to evaluate if, after controlling for the usual causal factors, there would be any incremental influence due to attitudes. On several occasions in past research (see e.g., Breeden and Lephardt, 2002 at 75), we found an influence of attitudes on grade achievement with those students with more "pro-market" attitudes achieving higher grades. In this study of principles of microeconomics students, we found no such statistically significant influence. Table IV presents our results with the typical control variables being gender, age, ACT score and self-reported GPA. Financial aid was negatively correlated with final course grade, a result which we have found before. When adding the overall fairness survey question to the regression, we find no statistical significance in its coefficient. This is true of both the pre-course first day survey and the "post" survey administered the last day of class. Of the control variables, the "male" variable deserves a brief mention. This finding that males score higher grades in economics classes, even after controlling for other obvious causal factors, is one that has appeared repeatedly in research since our first 1992 study. In an earlier model of grade achievement based on a different sample of students, we found for example that the coefficient for male was as much as one-half a letter grade (on a four point scale). Here we found that the coefficient for male indicated a 2.5 point higher grade on a 100 point scale. This

Table III. Change in Attitude: Question #22

Dependent Variable: CHANGE in Q22

Sample: 1 214

<u>Variable</u>	<u>Coefficient</u>	<u>Std. Error</u>	<u>t-Statistic</u>
C	10.59	10.80	0.98
MALE	-5.84	3.12	-1.87**
GPA	1.65	3.04	0.54
FINAID	-6.90	3.16	-2.18***
MALE INSTRUCT	-5.20	3.14	-1.65*
Adjusted R-squared	0.04	Mean dependent var	6.46
S.E. of regression	20.68	S.D. dependent var	21.07
Durbin-Watson stat	2.01	F-statistic	2.75

Significant at 90%/95%/99% indicated by \*/\*\*/\*\*

Table IV: Course Grade Regression

Dependent Variable: Ending Course Grade (100 point scale)

Sample: 1 214

<u>Variable</u>	<u>Coefficient</u>	<u>Std. Error</u>	<u>t-Statistic</u>
C	-25.41	19.08	-1.33
MALE	2.50	1.38	1.81*
AGE	2.05	0.89	2.31**
ACT	1.30	0.22	5.79***
BUS	3.81	1.37	2.79***
GPA	9.09	1.56	5.82***
FINAID	-1.66	1.36	-1.23
Q22	0.00	0.03	0.13
Adjusted R-squared	0.44	Mean dependent var	79.70
S.E. of regression	8.26	S.D. dependent var	11.04
Durbin-Watson stat	1.77	F-statistic	19.65

Significant at 90%/95%/99% indicated by \*/\*\*/\*\*

finding has appeared in other research in grade achievement in economics. As to the reasons for it, we can only speculate. It could be study habits, interests, methods of teaching or of testing, bias of instructor (less a concern here because of the female instructor). For now we merely confirm previous research that males tend to outperform females in economics courses, at least as measured by ending course grade.

### **Conclusions**

In summary, we find that the introductory level microeconomics course measurably changes students' attitudes toward the market in the direction of more pro-market. We also find by a detailed inspection of the results that gender of both instructor and student matters in so far as changes in attitudes toward the market system are concerned. We find as before that male students receive higher course grades than females (2.5 out of 100 points). Unlike prior research, we did not find any correlation between attitudes toward the market and course grade. Tempering these results are the study's limitations.

- First, when using a survey to evaluate attitudes there could be a strong bias to answer in the "right" or perceived most desirable way. This does not pose as great an issue in the pre-class assessment as the post-class assessment. For example, the question of whether the change in reported attitudes reflects a better understanding of the efficacy of the market or is it a reflection of students answering in the socially acceptable manner remains unclear. The issue becomes more difficult when the statistically significant changes in attitude are seen among females who might be inclined to answer to their female instructor in a more desirable manner. This difficulty can be addressed in future studies by re-surveying the students to see if there is consistency in their reported attitudes through time.
- Second, the extent to which we can generalize from the

evidence we present for attitude changes and grade achievement is limited because the results are based on a sample from undergraduate classes at a Midwestern, Jesuit urban university.

### **Implications for research and teaching**

The authors welcome collaboration with college teachers from all regions who might be interested in broadening the sample of student attitudes. Questions left unanswered such as the effect on and possible interplay between gender, ideology, and style of instructor can only be answered by looking beyond our own institution. Demographic backgrounds of students although partially controlled for in our study, could be a factor in both beginning attitudes and their change over the course of a semester's instruction. The effect of textbook on attitudes is also undetermined.

The most interesting survey result was the finding of a significant attitude change of female students of the female instructor (57.6% pre- to 70.78% post-semester agreement with the summary market fairness question). We suspect that teaching pedagogy, gender or attitude of instructor, or some interplay between these is at work here and implications for teaching awaits the results of further research. Given the potential change in student attitudes toward the market system that can result from a semester's instruction in introductory microeconomics, it is our opinion that open discussions of the market's "fairness" or "morality" and the instructor's attitudes toward the market system are appropriate.

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