# THE MARKET ATTITUDES INVENTORY: THE DEVELOPMENT AND TESTING OF RELIABILITY AND VALIDITY

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### ABSTRACT

In this article we report the development of a 22-statement survey that measures attitudes towards the market system. We report on the testing of the Market Attitude Inventory (MAI) for reliability and validity. Mean scores on the instrument are reported for a random sample of Midwest high school social studies teachers. We conclude that the MAI is a valid and reliable instrument. The MAI has applications in research, educational outcome assessment, and teaching pedagogy for the measurement and evaluation of attitudes and values towards the workings of the market system in the US.

#### **INTRODUCTION**

In this article we report the development of a survey that evaluates an individual's attitudes towards the market system in the United States. Our motivation for developing the Market Attitude Inventory (MAI) was twofold. First, our overall and long-term research interests involve the evaluation of the relationship between an individual's attitudes toward the market system and achievement of economic success within that system (Breeden and Lephardt, 2002b pp. 67-68). For our longitudinal research project we needed a valid and reliable instrument to measure attitudes towards the market. Since we began the initial project we have continued to trace the careers and earnings of the original 180 undergraduates that we surveyed in 1993. Second, in the process of reviewing the literature it became apparent that there was a paucity of instruments and research that measured the values and attitudes people hold toward the market system. It was our contention that refining the original instrument we had designed in 1992 and making it available to other researchers and educators could make a contribution to this important area of understanding the affective component of economics.

## **REVIEW OF LITERATURE:** MEASURES OF ECONOMIC ATTITUDES

The importance of measuring economic values and attitudes using a valid and reliable measure was clearly articulated in several articles in economic education (Becker, 1983; Soper and Walstad, 1983). In the last twenty years there is still a dearth of research on attitudes concerning the market system.

In the process of developing the MAI we searched the literature for published surveys that measure attitudes toward the market system. We briefly describe four of the surveys we reviewed although none of them met our research needs. Soper and Walstad (1983) developed the Survey on Economic Attitudes (SEA). Their instrument is a two-part measure that was nationally normed, and externally validated. It consists of two parts with 14 questions for each section; The Attitudes towards Economics (ATE) section, and the Economic Attitude Sophistication (EAS) section. For a through review of the SEA see Phipps and Clark (1993). The first part asks for students' personal opinions of economics as a discipline and the second part judged the sophistication of economic knowledge. While the responses to these 28 questions were interesting, we sought a more basic reflection of attitudes toward general market outcomes not the discipline of economics. O'Brien and Ingels (1987) designed a 44 question economic values inventory that would enable the detection of changes in attitudes attendant to economic education which was designed for a younger population (seven to nine year olds). Shiller, Boycko, and Korobov (1991) developed a thirty-sixquestion instrument that targeted perceptions of fairness of market outcomes based on mini scenarios. This survey was far longer and more complex than we desired and it also required a fairly robust knowledge of formal economic relationships. Finally, Peterson, Kozmetsky and Albaum ((1991) surveyed a national sample of households in 1980 and 1989 regarding their attitudes towards capitalism. They constructed a set of 16 items based on input from 'the writings of well-know capitalist authors"; others from a previous survey they conducted. Although some of the items measured the elements of the market system that we were interested in, we concluded that our research project would be best served by designing our own survey.

#### **INSTRUMENT DEVELOPMENT**

We began the development of the survey with four simple objectives. The survey would need to 1) be a valid and reliable instrument based on standard statistical criteria, 2) have minimal cost for usage, that is, employ an acceptable level of language

comprehension for a diverse population, require simple directions, take less that 15 minutes to answer, and be easy to score, 3) assess attitudes towards the core functions, processes and outcomes of the market system and, 4) be acceptable and accessible for use in a wide range of potential research and educational applications.

The development of the items on the instrument began in 1992 as the result of our interest in measuring a person's attitudes towards the market. The overarching theoretical construct of the relationship between attitudes and economic success was presented in Harrison (1992), who argued that differing cultural attitudes between countries contribute to the explanation of differentials in economic prosperity. In order to explore these relationships we needed an instrument that would measure an individual's attitudes toward the outcomes of a market system.

The original content for each statement on the MAI was developed based on the an evaluation of student responses concerning the strengths and weaknesses of the market system, and our sense of the commonly accepted core concepts of markets outcomes that are notable in most introductory level economics textbooks (see Mc Connell and Brue, 1996 pp. 6-7). Initially we obtained student input by administering a questionnaire to 180 introductory microeconomics principles students in the fall 1992. The students were asked to provide input on two statements: 1) List what you believe are the major strengths of the market economy, and 2) List the major weaknesses of the market economy. They were also asked to rank their responses indicating whether they believed the item was very important, moderately important, or slightly important.

We independently assigned all student responses into content categories corresponding to market outcomes discussed earlier and with a 99% interrater reliability. We excluded any analysis of ranking the importance of the content areas because there was little variation in rankings and a preponderance of incomplete responses. It was our contention that a combination of core functions and processes defined in the discipline of economics as well as the perceptions of the students regarding the strengths and weaknesses was a solid basis for subsequent development of the statements on the inventory. In addition, we sought feedback from other economists and economic educators. We then constructed 19 statements based on a blending of the student input and our professional knowledge and experience. Nine statements on the inventory were constructed as affirmative statements about the basic workings of the market system and ten were constructed to reflect a negative statement about the basic workings of the market. The two scales made up the inventory statements. The response to each statement is measured by continuous scale of agreement from zero to 100%, where zero % agreement meant absolutely no agreement with the statement, and 100% meant absolute total agreement with the statement.

Initially we had designed a five-point Likert scale for responses however a colleague with expertise in attitudinal measurement recommended a continuous scale that could measure more subtle differences and would offer a richer basis for statistical testing. She suggested the scale could be easily collapsed into more discrete response units if needed.

We presented the pilot survey and mean score of students (Breeden and Lephardt, 1993) at the October 1993 National Council on Economic Education and the National Association of Economics Educators Annual Meeting (NCEE/NAEE). Based on the feedback from the session we added two more questions regarding the outcomes of the market, and a final summary question. We also began collecting data from a more diverse population.

#### Validity

We have continuously refined the instrument and have sought feedback and input from a wide range of professionals and educators. At the NCEE Meeting in 1999 we distributed the final version of the instrument to a group of thirty-five educators, economist, and high school teachers/administrators. Each individual evaluating the instrument was given the 20 item version of the MAI, and instructed that we were developing an assessment of an individual's attitudes towards the free market. They were asked to give feedback on the following questions: 1) Are there any questions (topic areas) that might measure important foundation ideas for a market system that we have missed? 2) Are there any questions on the current survey that can be revised? 3) Are there any questions in the current survey that are inappropriate and should be excluded? We received responses from 24 of the NCEE participants. Based on the responses from the NCEE participants', changes were made to clarify language, reduce vagueness and complexity, and redundancy. We also added two new questions. One statement was added that clearly addressed prices, one on entrepreneurship and the summary statement were rewritten to evaluate the overall fairness of the market system. We also distributed the inventory to our colleagues (10) in our economics department who were also asked to provide feedback on the MAI. All of the economists indicated that the major market processes and outcomes were either directly or indirectly measured in the instrument. We also changed the instrument's stem statement to evaluate attitudes towards the "market system in the United States", rather than the theoretical construct of the "free market". We believe that the critical evaluation and input of educators, administrators and economists provided the level of expert

knowledge to be assured of the content validity of the items in the inventory (Litwin, 1995).

The final version of the Market Attitude Survey (MAI) consists of 22 statements and a lead question. There are 11 market-positive statements and 11 market-negative statements. The expert opinion and feedback that we formally solicited and the more informal feedback we received over the past ten years constitutes strong evidence that the MAI is a valid measurement of attitudes towards market outcomes and processes. Table 1 presents the complete MAI with mean percent agreement responses a random sample of Social Studies teachers from the state of Wisconsin. The bolded statements (items 2,4,6,8,10,12,18,19,20,21,22) are the market-positive statements, and the remaining items are defined as market negative statements (items 1,3,5,7,9,11,14,14,15,16,17). It should be noted that there is no bold type used when the MAI is administered.

#### Reliability

The internal consistency of the final version of the MAI was evaluated using Cronbach's coefficient alpha. Cronbach's coefficient alpha is a commonly used test that measures the internal reliability among a group of items combined to form a single scale. The test is "...a reflection of how well the different items complement each other in their measurement of different aspects of the same variable or quality." (Litwin, 1995, p.24).

Potentially the alpha coefficient can range from zero to 1.00. The higher the coefficient alpha, the more confident we can be of the internal consistency of the items measuring positive and negative market attitudes. Nunnaly (1978) has indicated 0.7 to be an acceptable reliability coefficient but lower thresholds are sometimes used in the literature. Litwin (1995) also noted "levels of .70 or more are generally accepted as representing good reliability."

We calculated the alpha coefficient for the two scales. We used the SPSS software to generate Cronbach's coefficient for the two scales. Items 2,4,6,8,10,12,18,19,20,21 and 22 were used to generate the alpha for the market-positive scale and items 1,3,5,7,9,11,13,14,15,16,and 17 were used for the market negative scale. The alpha coefficient was generated from our large random sample of 900 teachers from the data bank of the Wisconsin Department of Public Instruction grade 7-12 social studies teachers (n = 443: 49.2% response rate). Chronbach's Alpha for the market positive scale was .812 and for the market negative scale was .799. The

alphas indicate that there is a strong internal consistency on the items that make up the market positive and market negative statements.

Table 1. MARKET ATTITUDES INVENTORY	
Attitude survey questions:	
Indicate your level of agreement with the following statements. Write in a number between 0% and 100 % to reflect your percentage [%] of agreement according to the following scale:	
Strongly disagree Moderately disagree Neutral Moderately agree Strongly a   0 %	igree 6
Please use the numbers between the two extremes to indicate partial agreement, e.g. 15%	or 85%.
In my opinion, the market system in the US	Means
1leads to an unfair distribution of income	54
2 rewards people fairly for their productivity and hard work	61
3encourages unethical business behavior	59
4leads to quality and technological advancement in	
products and services	81
5leads to inadequate amounts of important public services	
(police, roads, preventative health care)	45
6provides opportunities and incentives for success	78
7encourages greed and excessive materialism	73
8allows equal access to work opportunities	50
9leads to erratic cycles of growth and decline	
in economic activity	54
10raises the living standard for most people	64
11leads to monopoly power among businesses	62
12leads to an efficient use of resources	47
13encourages the abuse of the environment	68
14leads to unemployment and worker insecurity	48
15leads to excessive risk of business failure	46
16requires a lot of government control to work well	45
17allows too much foreign competition	39
18provides consumers the goods and services they want	80
19provides employment opportunities for all who desire	66
20encourages innovation and entrepreneurship	82
21provide goods and services at an affordable price	69
22 "Overall and in summary, I believe that the market	<i>(</i> <b>-</b>
system in the US is a fair and ethical system.	65

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#### Norming

We report the MAI means in Table 1 for the high school teachers (n=443). We acknowledge the inherent limitations of a midwestern sample, however, we believe that reporting means for our existing sample is useful for those who are interested in using the instrument and would perhaps add to the database for future norming. In other research we have explored the implications of the means differences between different levels of education and differences in other demographic characteristics (Breeden and Lephardt, 2002a).

#### **Usefulness of the Instrument**

The MAI can be utilized in several types of applications. First, in conjunction with objective measures of economic knowledge the MAI would be an excellent tool for evaluation. The survey could be used to evaluate attitudinal changes as the result of economic instruction if that is an intended outcome of the course or training. As a prepost assessment, the MAI would be a relatively easy tool to utilize. The MAI can be used as a quantitative measure of accountability for funding agencies and research projects that are looking for attitudinal changes as a dimension of the program

Although current pedagogy regarding the teaching of economics does not systematically address attitudes and values it is becoming an increasingly important issue in academe. We would encourage the use of the MAI in delving into the relationship between attitudes and learning. For the instructional purposes the results of the MAI allow for dialogue concerning the values and attitudes students possess regarding the market system, its processes and outcomes. It provides the framework for the discussion of the evolution of a student's attitudes and values towards the market system. An instructor could use the MAI (an affective measure) for discussion in conjunction with a content objective evaluation. In this application it is possible to address the linkage between credible evidence and affective reactions based on false premises.

We also believe that the MAI can be used in outcome assessment in economics to augment other measures used for the evaluation of continuous improvement. In most colleges and universities the assessment process is being driven down to the department level and often there is an assessment category that reflects values and dispositions relevant to the discipline. The MAI is appropriate for PRE-POST measurement of change in expressed attitudes.

We have also been utilizing the instrument as a potential predictor of economic success measured by earnings (Breeden and Lephardt, 2002). It is our contention that individuals with a positive disposition towards the workings of the market are more likely to se successful in that system. Our tentative longitudinal findings support this perspective.

Lastly, any research involving a desire to measure attitudes towards the market could utilize this instrument. The simplicity of use and the clarity of the content make the instrument potentially usable in a wide variety of applications.

#### SUMMARY AND CONCLUSION

We conclude that the MAI is a valid and reliable instrument that has applications in research, teaching and assessment. Content validity of the item on the instrument was established through the formal and systematic review of the items by experts in the field of economics, the input of educators and administrators in economic education, and our own professional knowledge and experience. We are confident that the instrument measures attitudes towards market process and outcomes. The Cronbach's coefficient alphas for the scales were beyond the typical threshold level established in psychometrics (Litwin, 1995, Nunnaly, 1978) indicating that the MAI is an internally reliable instrument.

One aspect of the MAI that we would like to explore in the future is the impact of current events on self-reported attitudes. For example, it is likely that a plethora of public information on a current event like the failure of Enron or the issues of unethical behavior is the Mutual Fund industry could have a potential impact on the attitudes people hold concerning items on the survey and the summary question about the overall fairness and equity of the market system. We would expect that a persons' attitudes and beliefs are influenced and heightened by her perceptions of current market events. There are many interesting and unanswered questions about the nature of attitudes towards the market system and intervening events. We believe some of these questions can be addressed using the MAI as a benchmark of market attitudes.

We recognize that a national norming would have strengthened the evaluation of the MAI, but it was beyond the scope of this project. Our future research goal is to provide norms for more diverse populations. We are confident that the random sample of the Midwest high school social studies teachers can provide an important insight into the norming for teachers, which is an important area in the field of economic education.

The MAI is a user-friendly instrument. It is easy to administer and interpret. Most high school and college students can complete the MAI in less than 15 minutes. The Flesch-Kincaid Reading Scale measures the reading level at 9.3. This means that the average high school freshman should have no significant problem with reading and comprehending the inventory.

In summary, we feel that the MAI is a valid and reliable inventory that can be used to measure a person's attitudes towards the workings of the market system. We welcome other researchers interested in attitudinal measurement of market outcomes to utilize this instrument.

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