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## Is A Positive Attitude Toward Free Markets An Inferior Good? ♥

**Michael K. Block\* and William J. Boyes\*\*, ♥**

*\* Emeritus Professor of Economics, Department of Economics,  
University of Arizona, McClelland Hall 401, PO Box 210108,  
Tucson, AZ 85721-0108, USA.*

*\*\* Department of Economics, W.P. Carey School of Business,  
Arizona State University, Main Campus,  
PO Box 873806, Tempe AZ 85287-3806, USA.*

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Just over fifty years ago Arrow and Debreu showed that under appropriate assumptions a perfectly competitive economy would reach a Pareto Optimal general equilibrium. Since their demonstration, a great deal of time and effort has been devoted to establishing exceptions to this theoretical demonstration that free markets result in Pareto Optimality and to the proposition that free markets result in an inequitable distribution of income. While the theoretical attacks seem to have led many in and out of academia to conclude that the free market can not be trusted to allocate goods and services, there are still respectable intellectual arguments for favoring unfettered markets. In the split over the desirability of free markets the opponents appear to be disproportionately composed of those who have benefited the most from free market. Indeed, wealthy nations and upper income groups in most societies, typically attempt to control the free market in their attempts to reduce poverty rather than promoting free markets as a solution to poverty. This suggests that one's attitude toward free markets depends on one's income and the empirical analysis reported in this paper confirms that indeed, a favorable attitude toward market allocation is an inferior good. **JEL: A2, D10.**

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In its simplest form, economic theory suggests that society can not do better than the outcome of unfettered markets. Arrow and Debreu (1954) showed that under conditions of perfect competition, with preferences and choices independent, and under appropriate assumptions of convexity, an economy would reach a Pareto Optimal general equilibrium. The Arrow-Debreu model resulted in the fundamental theorems of welfare economics: (1) every competitive equilibrium is Pareto efficient; (2) any allocation of scarce resources that is Pareto efficient can be achieved by a competitive equilibrium. The analysis was powerful – for the first time, what Hayek and others had known was true, was mathematically demonstrated. Yet, since then, more resources have been devoted to finding fault with the result than with finding support for it. First were externalities and other so-called market failures. Then came the assault on the perfect information assumption, rationality, barriers to entry, large firms replacing markets, public goods, asymmetric information, network effects, path dependence, lock-in, and so on. On a less theoretical basis, attacks on the free market idea arise as income inequality widens and problems of the poor are given attention.

The result of the theoretical attacks and the disagreement with market outcomes seems to have led many both in and out of academia to the general conclusion that the free market can not be trusted to allocate goods and services. A former editor of the *Economist* captures this view in his statement that “Anyone who tells you that markets left to their own devices will always lead to socially beneficial outcomes is talking utter nonsense.”<sup>1</sup> This statement, with the “always” left out, captures what most politicians and the public seem to think – markets can not be left to their own

devices. Even with considerable evidence that income mobility is positively correlated with free markets, there is a sense that free markets lead to problems rather than solutions.<sup>2</sup>

Over time, evidence shows that the general public expresses an increasing disaffection with free markets and increasing support for government intervention. In 1982, a Roper poll showed that 80 percent of Americans were described as hating deficits. By the end of that decade, similar polls showed a decline in this percentage and an increase in the number of people who believed that the primary responsibility for social issues rested with the federal government. The General Social Survey carried out by the University of Chicago since 1975 has included questions asking whether government should do more to solve our country’s problems, more to solve poverty problems, and whether responsibility for medical bills is the responsibility of the government in Washington. In 1975, 49 percent of all respondents agreed with the statement that help with medical bills was a responsibility of the federal government, 40 percent believed it a federal responsibility to help all poor Americans, and 38 percent felt that the federal government should do more to solve the country's problems. Support for the government’s involvement declined during the early 1980s, but has risen since. The Center for the Study of Policy Attitudes, found, in 1994, that 80 percent of Americans believe the government has the responsibility “to do away with poverty in this country.”<sup>3</sup> That is a ten percent growth since 1964. A Washington Post - ABC News poll in 1995 shows that 70 percent of Americans supported

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<sup>1</sup> Weelan (2002), p.51.

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<sup>2</sup> See Birdsall and Graham (1999) for a recent overview of free market and income mobility issues.

<sup>3</sup> The Atlanta Journal and Constitution, December 8, 1994, Section C, p.1.

government involvement in all aspects of the economy.<sup>4</sup>

Cross section evidence also implies a negative relationship between income levels and attitudes toward free markets. For instance, when a market in human organs is proposed, it is the wealthy who argue it would hurt the poor and the poor who support the idea of a futures market.<sup>5</sup> Similarly, in the school choice debates, it is the poor who benefit from markets and the wealthy who oppose them.<sup>6</sup> This leads to the question of whether it is the poor who favor market allocation and the wealthy who find fault with market allocation.

In an attempt to provide some evidence regarding the relationship between income and the “taste” toward market allocation, we created a survey instrument that had respondents indicate a preference for or against market allocation in alternative settings. There are three components to the survey instrument: a test of economic literacy, survey questions about each respondent’s economic educational attainment, and a series of questions designed to reveal the degree of confidence respondents have in market allocation.<sup>7</sup> The literacy and educational attainment components enable us to control for how much exposure to economics students in various income groups have had and how much economics these students actually know. The market attitude component contains direct observations of student attitudes toward market allocation. With these data we are able to disentangle the effects of economic knowledge, exposure to economic reasoning, and household income levels on attitudes toward market allocation.

The test of economic knowledge consists of multiple-choice questions taken from the National Council on Economic Education literacy tests covering most of the Voluntary National Content Standards in Economics. The attitude toward market allocation consisted of five scenarios we created describing a resource allocation problem followed by a list of four potential solutions. The solutions include those provided by a free market, those that would occur under first-come-first-served, those resulting from government mandate, and those coming from a random allocation. What we call market confidence is the number of cases in which the student “completely agreed” or “agreed with slight reservations” with the market allocation mechanism in the scenarios. This variable can take on any of the integer values between 0 and 5.

A sample population of 1807 Arizona high school students in 37 schools took the test. Schools were classified by size and location and then randomly selected for solicitation. The response rate was about 89 percent. School districts represented in the sample include the two largest districts in the state (Mesa Unified School District and Tucson Unified School District), districts from smaller metropolitan areas (such as Flagstaff and Yuma), and rural areas (such as on the Navajo reservation). Seven hundred sixty students in the sample had never taken an economics course; 750 were concurrently enrolled in an economics course when they took the test; and 290 had previously enrolled in an economics course. The high schools were randomly selected from the state – no distinction was made between rural and urban schools, that is, a random stratified sample was not used.

In order to test the hypothesis that the perceived desirability of using markets to allocate goods and services is related to family income, we estimated the relationship between market confidence and income, controlling for economic knowledge and exposure to economic education. The

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<sup>4</sup> Pittsburgh Post-Gazette, May 18, 1995, p.A8

<sup>5</sup> See Kaserman and Barnett, (2001).

<sup>6</sup> See as an example, the articles in *Cato Journal*, “Creating a Competitive Education Industry” Spring/Summer 2005.

<sup>7</sup> The test is available from the authors.

estimates were carried out using a negative binomial regression due to the structure of the dependent variable. The independent variables used as controls for exposure to economic thinking are: whether the student is currently taking an economics class (EC1), whether the student has previously taken and successfully completed an economics course (EC2), whether the student was previously enrolled in an economics course but did not successfully complete it (EC4), whether the student was enrolled in an AP/IB economics course (AP/B), economic literacy, measured as the percentage correct on the economic literacy component of the survey (Right), and family income. The median household income (median income) for the zip code in which the school is located, adjusted for students who live outside the school boundary, is the proxy for the student's family income since no direct observation of the latter was available.<sup>8</sup>

While the economic literacy test component of the survey is formally only a control for this study the test results and their determinants are quite interesting in and of themselves. The results of how students performed on the economic literacy test (Q1-Q14) are summarized in Table 1. Coursework in economics is significantly related to literacy in economics. While the average score for those who had not taken economics was 37 percent, the score for those who had taken an economics course or

were enrolled in one concurrently at the time of the test was 50 percent. Students who were actually concurrently enrolled in economics courses averaged 55 percent while those who had previously passed an economics course averaged only 43 percent. While the 43 percent score is higher than the score earned by students who had never taken an economics course, it suggests that economic literacy depreciates quickly -- some of literacy gained from a single course is lost within no more than one year after students leave the course. Enrollment in the College Board's Advanced Placement Economics program or the International Baccalaureate program meant a superior performance to the results of those enrolled in other economics courses.

Overall, confidence in the market is very limited; there were significant differences depending on whether economics classes had been taken or not and whether the classes taken were advanced classes or not. The results are listed in Table 2. Only three percent of the students agreed "completely" or "with slight reservations" that the price mechanism should be used in every one of the scenarios. Even the Advanced Placement and International Baccalaureate students had little confidence in the market solution. Only twelve percent of students enrolled in an Advanced Placement or an International Baccalaureate program agreed with the use of prices to allocate resources in all scenarios. Five percent of the students who had taken a course in economics agreed with the use of market solutions in all five scenarios, as opposed to two percent of those who had not taken an economics course. Those who scored in the top 15 percent on the literacy test agreed with the proposed market solutions more often than those who scored lower on the test. Nine percent of the top scorers agreed with market allocation in all scenarios, as compared with three percent among others.

As shown in Table 3, of the controls for exposure to economics (EC1, EC2, EC4,

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<sup>8</sup> Median-income was used simply because that was the only income variable we had available.

and AP/IB), only the coefficients on EC2 and AP/IB are statistically significant. In other words, concurrent exposure to economics seems to be important only if it is at an advanced level; and, in other cases it appears that an economics course, even if successfully completed, affects a student's view of market allocation only after some time has passed.

We found a significant relationship between income and the probability of agreeing with the market solution; the higher is income, the lower is the probability of agreeing with the market allocation. In other words, the choice of the market as the preferred allocation mechanism fits into the characteristic of an inferior good. Although this result must be tempered due to the limited measure of income, it is something to be looked at more carefully in the future.

Although the estimated coefficients for the negative binomial regression do not have a straightforward economic interpretation, we can make sense of the effects of a small change in an independent variable around the mean of the dependent variable. The marginal effects are listed in Table 4. The marginal effect of income on confidence in the market is  $dy/dx = -7.91e-06$ . This tells us that a 30% increase in median income (mean of median incomes is \$32,700) leads to a 5 percent decrease in the number of scenarios in which the student agrees with market allocation.

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**Table 1: ACEE Economic Literacy And Attitudes Survey: Summary Of Results**

**ECONOMIC LITERACY (Q1-Q14) - Percent Correct**

| <u>Questions</u>                       | <u>AZ HS Sample</u> | <u>W/ Econ</u> | <u>W/ No Econ</u> | <u>AP/IB</u> | <u>National Sample</u> |
|--|---------------------|----------------|-------------------|--------------|------------------------|
| Q1 (Fed)                               | 40%                 | 53%            | 23%               | 86%          | 28%                    |
| Q2 (Fed)                               | 26%                 | 33%            | 16%               | 61%          | 19%                    |
| Q3 (Fed)                               | 47%                 | 56%            | 34%               | 87%          | 24%                    |
| Q4 (NCEE)                              | 74%                 | 76%            | 70%               | 94%          | 54%                    |
| Q5 (NCEE)                              | 52%                 | 56%            | 46%               | 66%          | 38%                    |
| Q6 (NCEE)                              | 46%                 | 51%            | 39%               | 78%          | 41%                    |
| Q7 (Fed)                               | 34%                 | 39%            | 26%               | 66%          | 38%                    |
| Q8 (ACEE)                              | 20%                 | 20%            | 18%               | 14%          | NA                     |
| Q9 (NCEE)                              | 68%                 | 69%            | 66%               | 90%          | 58%                    |
| Q10 (NCEE)                             | 78%                 | 78%            | 77%               | 95%          | 78%                    |
| Q11 (Fed)                              | 27%                 | 36%            | 15%               | 69%          | 45%                    |
| Q12 (ACEE)                             | 46%                 | 56%            | 32%               | 86%          | NA                     |
| Q13 (Fed)                              | 29%                 | 31%            | 27%               | 49%          | 30%                    |
| Q14 (NCEE)                             | 38%                 | 44%            | 29%               | 72%          | 23%                    |
| All Q1-14                              | 44%                 | 50%            | 37%               | 72%          | NA                     |
| NCEE questions<br>(Q4,5,6,9,10,14)     | 59%                 | 62%            | 55%               | 82%          | 49%                    |
| Fed questions<br>(Q1, 2, 3, 7, 11, 13) | 34%                 | 41%            | 24%               | 70%          | 31%                    |

**Table 2: Attitudes Toward Using Prices To Solve Market Allocation Problems (Q16-35)**

| <u>Scenarios</u>                           | <u>AZ HS Sample</u> | <u>W/ Econ</u> | <u>W/ No Econ</u> | <u>AP/IB</u> | <u>T15%</u> | <u>B15%</u> |
|--|---------------------|----------------|-------------------|--------------|-------------|-------------|
| S1-Kidneys                                 | 34%                 | 34%            | 34%               | 41%          | 37%         | 36%         |
| S2-Gasoline                                | 38%                 | 43%            | 30%               | 67%          | 57%         | 31%         |
| S3-Dorm rooms                              | 29%                 | 31%            | 25%               | 39%          | 29%         | 30%         |
| S4-Hot dogs                                | 30%                 | 34%            | 23%               | 51%          | 45%         | 25%         |
| S5-Pollution                               | 47%                 | 49%            | 44%               | 60%          | 61%         | 38%         |
| All market<br>allocation<br>S1-5<br>Q16-35 | 3%                  | 4%             | 2%                | 11%          | 8%          | 3%          |

This percentage equals percentage completely agree and percentage agree with slight reservations.

**Table 3: Confidence In Market**

| <u>MAsup</u> | <u>Coef</u> | <u>std. Err</u> | <u>z</u> | <u>p&gt;z</u> | <u>[95% C.I.]</u> |           |
|--------------|-------------|-----------------|----------|---------------|-------------------|-----------|
| EC1          | .720689     | .056692         | 1.27     | 0.204         | -.0390464         | .1831843  |
| EC2          | .219863     | .0709489        | 3.10     | .002          | .0808057          | .3589202  |
| EC4          | -.0032363   | .1030868        | -.03     | .975          | -.205287          | .1988101  |
| AP/IB        | .1700069    | .078429         | 2.17     | .030          | .016289           | .3237248  |
| Right        | .336391     | .1197885        | 2.81     | .005          | .1016098          | .5711721  |
| Medianincome | -4.56e-06   | 2.12e-06        | -2.19    | .029          | -8.81e-06         | -4.88e-07 |
| Cons         | .4572106    | .0860903        | 5.31     | .0            | .2884766          | .6259466  |
| /Inalpha     | -4.502862   | 2.341502        |          |               | -9.092122         | .0863978  |
| alpha        | .0110772    | .0259374        |          |               | .0001125          | 1.09024   |

Likelihood ratio test of alpha=0; chibar2 (01) = .19 Prob>=chibar2 = 0.333

**Table 4: Marginal Effects**

| <u>Variable</u> | <u>dy/dx</u> | <u>std. Err.</u> | <u>Z</u> | <u>p&gt;z</u> | <u>[95% c.i.]</u> |          | <u>x</u> |
|-----------------|--------------|------------------|----------|---------------|-------------------|----------|----------|
| EC1             | .1237981     | .09811           | 1.26     | .207          | -.068491          | .316087  | .379085  |
| EC2             | .4048473     | .14292           | 2.86     | .004          | .128357           | .6886    | .111928  |
| EC4             | -.005502     | .17501           | -.03     | .975          | -.348509          | .337505  | .060458  |
| AP/IB           | .309807      | .15283           | 2.03     | .043          | .01026            | .609354  | .107026  |
| Right           | .5727059     | .20357           | 2.81     | .005          | .172709           | .971703  | .452906  |
| Median-income   | -7.91e-06    | .000             | -2.19    | .028          | -.000015          | -8.4e-07 | 31712.8  |

\* **Michael K. Block** is Emeritus Professor of Economics at University of Arizona. He has served as Director of the Office of Economic Education at the University of Arizona. He is a co-founder of BASIS Schools, a group of 5-12 charter school focused on academics, and is the current chairman. He has written extensively in areas of crime, antitrust, and deregulation. He was chairman of the Goldwater Institute and appointed by President Reagan to the United States Sentencing Commission.

\*\* **William J. Boyes** is Professor of Economics and Director of the office of economic education at Arizona State University. He has also served as Chairman of the Economics Department of Arizona State University, Dean of the College of Business at California Polytechnic University, San Luis Obispo, and has taught in executive MBA programs in Beijing, China and Mexico City. He has written extensively in public choice and applied microeconomics. He has published four books, and three monographs. His principles textbook, Economics (Houghton Mifflin) is in the 7<sup>th</sup> edition.

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