

## Professional Information

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## Economics Indoctrination or Selection? Some Empirical Results

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Economics classes at universities predominantly deal with mainstream economics; ethical aspects are not considered explicitly. The Pareto principle, the value judgment to which mainstream economics refers, is "neutral" with respect to distributive and ethical considerations (e.g., Gauthier 1986, chap. 4). Many teachers neglect topics beyond Pareto efficiency (Colander 1987), even when tradeoffs between efficiency and ethical values are obvious.<sup>1</sup> The interrelationship between ethics and economics is thus widely disregarded. Students' ethical considerations or norms tend not to be revealed in the course of their economics education, and almost nothing is known about the degree to which these considerations are influenced during the students' economics program.

However, the interaction between ethics and market performance may become important under certain circumstances (Bergsten 1985): (1) ethical norms may be desirable in the economic sphere because they support market transactions (trust, truthfulness) (Arrow 1970); (2) in the cases of asymmetrical information

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and of time inconsistency, market transactions are facilitated in the long run by ethical norms, which are thus complementary to the price system; and (3) when markets fail, for example, because of externalities and public goods, then widely accepted norms may even become a substitute for the price mechanism. Therefore, price theory should explicitly take into account when and how ethical values influence market behavior as well as how the price system affects moral judgments.<sup>2</sup>

With regard to education, the interaction between ethics and markets may be crucial for two reasons: (1) insight into the impact of teaching on the future behavior of graduates would reveal the potential influence by professors on the acceptance of the price system; (2) when students leave the university and apply their skills as policy advisers, norms besides the price system become important (Nelson 1987), because successful policy advising has to take into account ethical considerations and other values of the people involved (see, e.g., Lane 1986).

Thus the question arises whether economic education affects the students' attitudes toward the price system. An analysis of students' beliefs is warranted because they do not necessarily coincide with those of the population in general.

## HYPOTHESES

Empirical evidence suggests that people educated in economics are more inclined to practice free-riding than other people. Marwell and Ames (1981), for example, report that in an experiment on public goods the percentage of resources invested in a certain commodity was, on average, surprisingly regular—in the range of 40 to 60 percent of the Pareto-optimal contributions.<sup>3</sup> In contrast, the group of graduate students in economics in the experiment invested only 20 percent voluntarily, leading the authors to suggest that economists may be different from everyone else. According to their view, a particular type of person should get involved in economics: people who are a priori more favorably inclined toward the price system than others and therefore choose to study economics. We call this the *selection hypothesis*—the willingness to apply the price system is determined before exposure to formal education in economics.

However, Marwell and Ames's results can be interpreted in another way: Economic education may induce students to behave in a more calculating manner. We call this the *indoctrination hypothesis*—students who attend microeconomics courses learn how to apply economics in daily-life situations in order to perform better than people without economics training, who possibly behave in a more altruistic way.

Both hypotheses are consistent with the evidence on free-riding given by Marwell and Ames (1981). Given adequate data, it should be possible to discriminate between the selection and the indoctrination hypotheses by distinguishing students who have just started economics studies from advanced students, treating each group as a subsample.<sup>4</sup> If advanced students show the same attitudes as beginners, the selection hypothesis is not rejected. By contrast, if advanced students show a significantly higher preference for the price system than beginners do, then the indoctrination hypothesis is supported. However, even if the indoc-

trination hypothesis is rejected, the selection hypothesis is not necessarily fully supported.

Therefore, besides separating the two groups of students, which allowed for a test of whether economic education implies a significant indoctrination impact,<sup>5</sup> a sample of the population was taken as a third group. This procedure allowed full discrimination between the two hypotheses.

Our experiments were all based on carefully specified situations of excess demand, thus representing a tradeoff between economic efficiency and some kind of ethical consideration: The respondents to the structured questionnaire had to assess the various situations with respect to the fairness of a price increase and thus revealed their willingness to apply the price system or, in other words, a part of their ethical considerations. Although the evaluation of fairness does not reflect ethical considerations in a broad sense, it can be considered as one (relevant and observable) aspect of ethics.

## THE EXPERIMENTS: DESIGN, MAIN RESULTS, AND INTERPRETATION

### Survey Design

The survey took place in the late summer of 1987 in Switzerland (Canton of Zurich) as well as in the Federal Republic of Germany (West Berlin). The following two groups of people were interviewed, by means of a written questionnaire:

1. Students of economics at the University of Zurich and the Free University of Berlin were given the questionnaire in an ordinary lecture. There were two different subgroups: (a) 356 economics students in introductory economics, interviewed on the first day of class, so any influence of the teachers could be excluded; and (b) 155 advanced students who had been trained in economics for at least two years.

2. Households in the general population of Zurich and West Berlin were randomly drawn from the telephone directory and were sent a letter, together with the same structured questionnaire. Eight hundred households were addressed in each city plus 200 in a pilot study (1,800 total). The overall return rate was 36 percent; 645 questionnaires were available for analyzing the population's responses.<sup>6</sup>

### Results

The introductory question in a subset of the questionnaire related to a situation of scarcity but did not mention explicitly the case of excess demand.<sup>7</sup>

*Question 1:* At a sight-seeing point, reachable only on foot, a well has been tapped. The bottled water is sold to thirsty hikers. The price is one Swiss franc (SFr) or one German mark (DM) per bottle. Daily production and therewith the stock are 100 bottles.

On a particularly hot day the supplier raises the price to SFr/DM 2 per bottle. How do you evaluate this price rise?

TABLE 1  
Student and Population Evaluation of Price Increase: Excess Demand for Water Not Explicitly Mentioned

Answer	Economics students (N = 173)		Population (%) (n = 161)
	Advanced (%) (n = 58)	Beginners (%) (n = 115)	
Completely fair	7	7	2
Acceptable	26	28	13
Unfair	46	44	37
Very unfair	21	21	48
	33	35	15
	67	65	85

The answers to this question, given in Table 1, show that the population evaluated the price increase quite differently than the economics students did: five out of six people (85 percent) found that the supplier acted in an unfair way (categories unfair and very unfair taken together), whereas only 2 percent considered the price increase to be completely fair. By contrast, only two-thirds of the students judged the higher price to be unfair, and 7 percent found it to be completely fair. In addition, students of both subgroups replied in almost the same way. The answers were clearly in favor of the selection hypothesis: (1) both beginners and advanced students evaluated the price increase in the same manner. This is the crucial condition that allows us to reject the indoctrination hypothesis. (2) On average, students judged the price increase to be fairer than the population at large. This is in line with the notion that economists (economics students) favor the price system to a greater extent than the average population does. This supports the selection hypothesis (Rubin 1982; Frey 1986).

In a subsequent step, the initial situation was varied for another subsample in three aspects in order to test the robustness of the basic results so far established.

#### Excess demand was explicitly mentioned

*Question 2:* At a sight-seeing point, reachable only on foot, a well has been tapped. The bottled water is sold to thirsty hikers. The price is one SFr or one DM per bottle. Daily production and therewith the stock are 100 bottles.

On a particularly hot day 200 hikers want to buy a bottle. As a consequence the supplier raises the price to SFr/DM 2 per bottle. How do you evaluate this price rise?

The answers to this question indicate that, when the situation of excess demand was explicitly stated, fewer respondents in each group found a price increase to be unfair than was true for question 1 (Table 2). Seventy-eight 78 percent (instead of 85 percent) of the population judged it unfair to raise the price. However, the gap between the population's and the students' evaluation persisted. Students as a whole fell into two groups; half found the price rise to be unfair and half considered it fair. Of the beginners, more than 50 percent thought it was fair to apply

the price system in this situation, a result that is not at all in line with the indoctrination hypothesis.

#### An additional commodity was considered

A modification in a subset of questionnaires considered the situation of scarcity within another framework: excess demand was no longer depicted for water but for snow shovels after a heavy snow storm.

*Question 3:* A hardware store has been selling snow shovels for SFr/DM 30. The morning after a heavy snow storm, the store raises the price to SFr/DM 40. How do you evaluate this price rise?

The population's evaluation of this price increase was similar to its evaluation of the price increase for water (Table 3). Four-fifths considered the seller's behavior to be unfair, a result that was in line with the answers to questions 1 and 2. The change of the framework had no effect on the population's evaluation: the price rise remained unfair.<sup>8</sup> By contrast, students obviously differentiated between the two goods in excess demand. They considered it fairer to apply the price system

TABLE 2  
Student and Population Evaluation of Price Increase: Excess Demand for Water Explicitly Mentioned

Answer	Economics students (N = 452)		Population (%) (n = 472)
	Advanced (%) (n = 148)	Beginners (%) (n = 304)	
Completely fair	10	11	5
Acceptable	33	46	17
Unfair	45	34	44
Very unfair	12	9	34
	43	57	22
	57	43	78

TABLE 3  
Student and Population Evaluation of Price Increase: Excess Demand for Snow Shovels

Answer	Economics students (N = 173)		Population (%) (n = 159)
	Advanced (%) (n = 58)	Beginners (%) (n = 115)	
Completely fair	10	10	2
Acceptable	52	49	16
Unfair	33	31	42
Very unfair	5	10	40
	62	59	18
	38	41	82

in the case of snow shovels than in the case of water: only two-fifths considered the price increase to be unfair. Thus the gap between the evaluation of the population and the students had widened. However, both groups of students replied in about the same way, thus providing support for rejection of the hypothesis.

#### The price system was compared with other systems

When people judge the price system to be an unfair means of balancing demand and supply in the case of excess demand, then one wonders if any other decisionmaking systems are considered less unfair. Or is it the situation of scarcity that is judged to be unfair? To avoid the possibility that the respondents referred to some nonexistent, completely fair rationing system, we presented three alternatives to a price increase: (1) the excess demand was removed by a *traditional procedure of a fixed rule*—the “first-come, first-served” principle; (2) the local authorities distributed the commodity in excess demand according to their own judgment (not described further in the questionnaire)—an *administrative principle*; and (3) the demanders got the commodity according to mathematical chance—the random principle.

Question 4 was designed to force the respondents to compare the relative fairness of the four allocation mechanisms.

*Question 4:* Please indicate how fair you evaluate the following means to distribute the water among the hikers:

- A price increase to SFr/DM 2 per bottle
- Selling the water at SFr/DM 1 per bottle on a “first-come, first-served” basis?
- The local authority buys the water for SFr/DM 1 per bottle and distributes it according to its own judgment?
- Selling the water at SFr/DM 1 per bottle following a random procedure (e.g., to all persons whose surname starts with A through to M)?

The results presented in Table 4 distinguish only between fair and unfair. The mechanisms:

Students	Population
1. first-come, first-served	1. first-come, first-served
2. price system	2. administration
3. administration	3. price system
4. random	4. random

A large majority of all groups of respondents favored the traditional procedure: first-come, first-served. Three-fourths of the general population (but only two-thirds of the students) found this allocation mechanism to be fair.

The population ranked the administrative principle as the second-best allocation mechanism, whereas students ranked the price system second best. The differences between the population's and the students' answers (beginners and advanced students taken together) were significant for each allocation procedure,<sup>9</sup> suggesting again that students in general answer differently from the population at large. Students, beginners and advanced, replied in the same way,<sup>10</sup> except on one point, which will be discussed below.

TABLE 4  
Subjective Evaluation by Students and Population of Alternative Allocation Mechanisms

Procedure	% who considered procedure fair		
	Economics students		Population
	Advanced	Beginners	
First-come, first-served	64 (n = 45)	68 (n = 106)	76 (N = 299)
Price system	49 (n = 45)	65 (n = 105)	27 (N = 293)
Administration	49 (n = 45)	38 (n = 106)	42 (N = 289)
Random	38 (n = 45)	18 (n = 105)	13 (N = 288)

In conventional economics, the traditional first-come, first-served principle is often considered to be inefficient. To attain a more efficient allocation of scarce goods, most economists would suggest the introduction of the market mechanism. Excess demand situations, such as people queuing to get a seat at an opera or, as still happens in many places in Eastern Europe, to buy ordinary consumer goods, are generally interpreted as a failure that should be overcome, at least in the middle run. However, at least two arguments may explain why the procedure of queuing is favored. First, queuing may be to the advantage of poor people who otherwise would have no chance to get the commodity in question at a low price (Weitzman 1977; Sah 1987), a position that some respondents may have taken. Second, in the case of an unexpected situation of excess demand, the procedure with the most predictable outcome is the traditional principle:<sup>11</sup> the early bird gets the worm. It is more difficult to cope with aspects of uncertainty within the framework of other allocation procedures.

#### Students learn about favorable properties of random procedures

Beginners and advanced students exhibited quite homogeneous responses to the questions presented so far. However, with respect to the four allocation mechanisms, the two groups showed one significant difference: advanced students considered the random method of distributing the water to be significantly fairer than the beginners did.<sup>12</sup> This difference may be explained by different levels of economic knowledge: beginners are not yet informed of the existence and the properties of randomly assigning scarce goods (Intriligator 1973; Mueller 1978), but advanced students most probably are. Random procedures have the advantage that they are not subject to any discretion by the actors involved. Sources of “injustice” or unfairness by the water suppliers are excluded, so these procedures should be considered to be more fair by those respondents who are aware of them than by those who do not know these mechanisms. This was the only case in our study where an influence from economics training could be observed.

This result stands in contrast to a recent study by Ng (1988), who found that teaching economic principles generally influences fairness evaluations of stu-

dents. In his experiment, people had to judge a price increase (called seating charge) in the case of excess demand for seats in a restaurant (on Saturday night). Ng found that economics students in general considered the price system to be fairer than did the general population, a finding in line with our selection hypothesis. He also pointed out that the answers of first-year students corresponded more closely than those of fourth-year students with those of the general population. In addition, explicitly informing people (including students) about the advantages of the price system in the case of excess demand for seats yielded a considerable shift in favor of a price increase. Ng concluded that economic education influences ethical values and that during their time at the university, economists differ from the general population.

The difference between Ng's results and ours may be due partly to the different situations described in the respective questionnaires. We were interested in the evaluation of fairness in a situation of excess demand for an essential, price inelastic commodity such as water on a hot day. Ng was dealing with a luxury commodity with a high elasticity of demand. Our inquiry indicated that students reacted to the type of commodity in question in a more sensitive way than the general population did: a price increase in the case of excess demand for snow shovels after a snow storm was considered less unfair than a price increase for water on a hot day by our students. The population, however, was insensitive to this variation. The results of Ng's inquiry are compatible with this observation: in the case of luxury goods, better-trained students objected less to the application of the price system than in the case of an essential commodity, whereas the general population and beginning students did not judge the rationing of luxury and normal goods differently.

### The Influence of Ideology

Our results indicate that students' evaluations of fairness seem to remain stable during the time they participate in economics courses at the university. Another question is whether the answers given are determined perhaps by the students' political position. Do left-wing students tend to reject the price system and right-wing students support it? Accepting or refusing the price system could also be a result of ideological attitudes, which do not necessarily coincide with ethical evaluation or offer norms.

The questionnaires included a section asking for a set of personal attributes of the respondents<sup>13</sup> so we were able to test for the potential impact of ideology. For the students (beginners and advanced), we ran a *t* test, using the answers to our second question as class variable, whereas the individual political positions (ranging on a scale from 0 for the extreme left to 100 for the extreme right) stood for the distributed variable (Table 5). The results suggest that the relation between the political position of students and their value judgment about a price increase tends to weaken during their study of economics. Among beginners, left-wing students judged the price increase to be significantly less fair than right-wing students did. For advanced students, however, such a correlation between political position and inclination to the price system was not observed.

TABLE 5  
Ideology and Subjective Fairness

Sample: beginners
Answer: fair ( $N = 140$ ) mean political position: 55.1
unfair ( $N = 121$ ) mean political position: 47.1
<i>t</i> value: 2.3 (difference was significant)
Sample: advanced students
Answer: fair ( $N = 61$ ) mean of political position: 39.4
unfair ( $N = 82$ ) mean of political position: 34.1
<i>t</i> value: 1.0 (difference is not significant)

Notes: The *t* tests concern the answers to question 2, i.e., to the situation of excess demand for water explicitly mentioned. The scale for determining mean political position ranged from 0 (extreme left) to 100 (extreme right).

### Comparison with Theories on the Individual's Development

Apart from this, our experiment shed some light on how people develop attitudes toward the economy. Although the analysis we used is static, it nevertheless is helpful in tracing the development of students' fairness considerations and thus fits well into the research on the individual's development stages.

Lea, Tarpy, and Webley (1987, chap. 14), for instance, present a survey on the behavioral stages of children. Economic psychologists conclude that "an infant is clearly not a *homo oeconomicus*" and, therefore, they try to explain the individual's development from an "uneconomic" child to an "economic" adult. The studies show how children learn to cope with money and markets step by step, and how fairness considerations (e.g., concerning wages) are influenced by information. However, they all concentrate on the analysis of people about 16 years old or younger. In contrast, our inquiry covered the period between 20 and 25 years of age and brought forth evidence that, during that stage, ethical considerations toward the price system no longer seem to change.

### CONCLUDING REMARKS

Learning and practicing economics has no influence on the attitudes of students toward the fairness of price increases. The evidence brought forward by our experiments contradicts the indoctrination and supports the selection hypothesis. Students of economics start with the same degree of sympathy/antipathy for the price system that they exhibit four years later. Thus, it seems that economics students represent a special group of people who prefer the price system more than the general population does. That could be one of the reasons why they decide to study economics.

### NOTES

1. As Sen (1987) convincingly argues, a continuum of values exists and not just one value, i.e., self-interest. See also Ng (1985), who describes various types of tensions between equity and efficiency.
2. For two competing interpretations of the relationship between ethics and the price system, see Hirschman (1982).

3. Free-riding cannot, of course, be interpreted directly as mentioned, but the amount of voluntary contributions to a public good indicates to what degree people care for values beside the calculations within the price system.
4. The same procedure had been chosen by Holler's (1983) investigation on how teaching affects students' ability to undertake probability calculations.
5. Of course, an implicit assumption is that students of different cohorts can be directly compared, meaning that except for economic education no other attributes of the students or exogenous shocks over time differ between the two groups.
6. The figures in the tables may differ sometimes from this total because questionnaires were not completely filled in.
7. The reason for the price increase was not mentioned; a situation of excess demand could be imagined.
8. The same question has been used by Kahneman, Knetsch, and Thaler (1986) on a sample of the population of two Canadian cities by means of a telephone interview. Their results were comparable to ours: 82 percent of the population found a price increase unfair.
9. Chi-square test; probability value  $< .05$ .
10. Chi-square test; probability value  $> .05$ .
11. According to Heiner (1983 and 1985), people switch to rule-governed behavior if uncertainty reaches a certain point. The higher the uncertainty, the lower is the likelihood that people will move away from that rule.
12. The chi-square test yields a probability value of  $.01$ .
13. The questionnaire included several questions concerning the respondents' social situation and attitudes. They could, for example, graphically indicate their political position on a scale ranging from extreme left to extreme right.

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