

# Consensus Among Economists: Revisited

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*Abstract:* The authors explore consensus among economists on specific propositions on the basis of a fall 2000 survey of American Economic Association members. Because some propositions are drawn from earlier studies, the results illustrate the dynamics of opinion within the profession. The authors generally find consensus within the profession, although the degree of consensus varies between propositions that are international, macroeconomic, and microeconomic in nature. Consensus is particularly strong for propositions of free international trade and capital flows. In contrast, macroeconomic propositions exhibit a lower degree of consensus, partly because of increased agreement with monetarist and supply-side propositions over time. The profession displays substantial skepticism concerning claims of the “New Economy.”

Key words: changes in opinion, consensus, economists' views  
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What does it mean to think like an economist? Has the agreement of economists to disagree changed over time? We explored these questions on the basis of a survey of American Economic Association (AEA) members. We updated a line of research that began in 1976 with a survey of economists by Kearn et al. (1979), subsequently extended by Alston, Kearn, and Vaughan (1992a, 1992b). Our results shed some light on the general degree of consensus within the profession on selected current issues and topics as well as the dynamics of opinion within the profession over the past 10 years.

The initial survey of economists (Kearn et al. 1979) attempted to identify the degree to which economists agree or disagree on a number of specific propositions. The authors of the study concluded that a broad consensus exists among economists, but they found comparatively higher degrees of consensus for propositions that are microeconomic in nature and lower degrees of consensus for macroeconomic propositions. The Alston, Kearn, and Vaughan (1992a) update of the Kearn et al. (1979) study was on the basis of a stratified random sample, and it confirmed that consensus is stronger on microeconomic than on macroeconomic propositions and is stronger for positive rather than for normative propositions. Our survey, which was on the basis of a random sample of members of

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the AEA, included a subset of the Alston, Kearn, and Vaughan propositions.<sup>1</sup> We constructed a consensus index indicating strong, substantial, modest, and no consensus. Our results indicate that consensus is highest for those propositions concerned with international economics. In addition, our results suggest that professional opinions have been particularly fluid in the area of macroeconomics.

### SURVEY, SAMPLE, AND MEASURES OF CONSENSUS

For the present study, a two-page questionnaire of 44 economic propositions was mailed in September 2000 to a random sample of 1,000 economists taken from the AEA membership roster. Of the 44 propositions, 24 were taken directly from the Alston, Kearn, and Vaughan survey. Following their design, each recipient was asked to indicate whether she or he mainly agreed, agreed with provisos or generally disagreed with each of the 44 propositions. The response rate was 30.8 percent. About 58 percent of our respondents were currently employed in academia, 16 percent worked for the government, and 21 percent were employed in the private sector. About 5 percent of all respondents were either retired or indicated multiple sources of employment.<sup>2</sup> Omitting this 5 percent to facilitate comparison with the Alston, Kearn, and Vaughan study left 298 respondents.

We constructed a consensus index for each proposition based on three different measures of consensus. The first element of our consensus index was the relative entropy index,  $\epsilon$ , used by Kearn et al. (1979) and Alston, Kearn, and Vaughan (1992a). This index was derived from information theory and ranged from 0 (*perfect consensus*) to 1 (*no consensus*).<sup>3</sup> The index does not indicate the direction of consensus but merely the degree of consensus. Furthermore, as pointed out in Fuller, Alston, and Vaughan (1995), because “. . . the relative entropy index is nonlinear and, as a consequence, large changes in the distribution of responses result in small changes in entropy,” interpreting the index was a matter of judgment. The Alston, Kearn, and Vaughan study that included “no response” as a fourth category did not specify any cutoff to indicate strong consensus but reported that, for the 17 propositions where responses were very polarized the average entropy index was 0.79. By contrast, our entropy index was constructed on the basis of three responses, excluding no response as a possibility.<sup>4</sup> We excluded this response because it was not known whether this group did not have an opinion or chose not to respond to the proposition.<sup>5</sup> On the basis of hypothetical distributions of responses, we chose a relative entropy value of less than or equal to 0.8 as indicative of a consensus (i.e., a substantial majority selected the same response).<sup>6</sup> The second element of our consensus index was based on a chi-square test of a uniform distribution.<sup>7</sup> This was equivalent to the null hypothesis of  $\epsilon = 1$ . If, for a particular proposition, we rejected the null hypothesis at the .10 Type I error level, then we concluded the test indicated consensus. The third element of our consensus index consisted of adding the conditional percentages of those who generally agreed and those who agreed with provisos and contrasting this with the conditional percentage of those who disagreed. Conditional percentages were calculated omitting the no response category. We based this measure on the supposition that reasonably similar views or broad agreement were

likely among those who generally agreed and those who agreed with provisos.<sup>8</sup> If 67 percent or more agreed or disagreed with a given proposition, we concluded broad agreement or consensus. Our index of consensus was constructed on the conclusions of each of the three measures. If all three measures indicated consensus, we concluded strong consensus. We reported two affirmative measures of consensus as substantial consensus whereas one affirmative measure was reported as modest consensus.

All propositions from the year 2000 survey are listed in Table 1, with the relative frequencies of responses to each proposition, the percentage of nonresponses to each item, and the three elements of our consensus index. In column 5, we listed our consensus index; the relative entropy index;  $N_0$ , if the null hypothesis of a uniform distribution (no consensus) cannot be rejected at a .10 Type I error level; and the percentages of broad agreement and disagreement.

For Table 1, we rearranged the order in which the propositions were presented to the respondents, grouping the propositions by topic area. The first 7 propositions deal with international economics. Propositions 8–25 deal with macroeconomic issues, propositions 25–28 address distributional issues, and propositions 29–40 address microeconomic issues. The final 4 propositions try to assess economists' opinion on New Economy issues.<sup>9</sup> By arranging the propositions in topical order, we present the reader with the opportunity to discover his or her own trends, interpretations, and opportunities for classroom discussion.

For the 24 propositions taken from the Alston, Kearl, and Vaughan survey, we report their results and measures of consensus in column 6 of Table 1. To increase the comparability of the two surveys, we found it necessary to reweight the Alston, Kearl, and Vaughan sample, which used a stratified random sample of 1,350 economists employed in the United States that consisted of economists in the top 10 graduate programs, other graduate programs, economists teaching principles courses at four-year colleges and universities, Society of Government Economists, National Association of Business Economists, and members of the Association for Evolutionary Economics. By contrast, our AEA sample respondents were asked their primary source of employment, that is, academic, business, or government. Omitting the 5 percent of our sample that were either retired or reported multiple employments, the proportion of academic economists in our sample was statistically different from the proportion of academic economists within the Alston, Kearl, and Vaughan sample. To mitigate the possibility that differences in the distributions of opinion resulted from the sample proportions rather than changes in opinion over time, we reweighted the Alston, Kearl, and Vaughan (1992b) data to match our sample proportions. To do this, we deleted the Association for Evolutionary Economics stratum from the Alston, Kearl, and Vaughan sample because this stratum was identified by ideology rather than place of employment.<sup>10</sup> Economists with evolutionary leanings should still be represented in the other strata, in both the 1990 and 2000 sample. We then constructed our consensus index for the Alston, Kearl, and Vaughan sample by recomputing their entropy indices on the basis of three rather than four responses, conducting the chi-square tests of a uniform distribution, and computing the conditional broad agreement percentages.

TABLE 1. Distribution of Responses for the 2000 and 1990 Surveys and Measures of Consensus

Proposition	R <sup>a</sup>	2000 <sup>b</sup> (%)	1990 <sup>c</sup> (%)	Consensus '00 <sup>d</sup>	Consensus '90	p <sup>e</sup>
1. Flexible and floating exchange rates offer an effective international monetary arrangement.	D	5.0	5.0	Strong € = .74	Strong € = .74	0.96
	A/P	31.5	32.8			
	A	61.4	60.7			
	NR	2.0	1.5	AG/DG .95/.05	AG/DG .95/.05	
2. Tariffs and import quotas usually reduce the general welfare of society.	D	6.0	4.8	Strong € = .66	Strong € = .59	0.43
	A/P	20.1	17.3			
	A	72.5	76.7			
	NR	1.3	1.1	AG/DG .94/.06	AG/DG .95/.05	
3. Some restrictions on the free flow of financial capital are essential to ensure the stability and soundness of the international financial system.	D	42.0		Modest € = .97		
	A/P	33.9				
	A	20.5				
	NR	3.7		AG/DG .56/.44		
4. Increasing globalization of the economy, facilitated by the World Trade Organization, threatens national sovereignty in the areas of environmental and labor standards.	D	66.1		Strong € = .77		
	A/P	21.1				
	A	10.7				
	NR	2.0		AG/DG .33/.67		

5. The economic benefits of an expanding world population outweigh the economic costs.

D	59.7	Subst.
A/P	23.2	€ = .80
A	11.1	
NR	6.0	AG/DG
		.36/.64

6. The U.S. trade deficit is primarily due to nontariff trade barriers erected by other nations.

D	87.6	Strong
A/P	7.4	€ = .31
A	1.3	
NR	3.7	AG/DG
		.09/.91

7. Large balance of trade deficits have adverse effects on the economy.

D	48.0	32.4	None
A/P	33.6	35.9	€ = 1
A	15.4	29.0	NO
NR	3.0	2.6	AG/DG
			.67/.33

0.49

8. An economy in short-run equilibrium at a real GDP below potential GDP has a self-correcting mechanism that will eventually return it to potential real GDP.

D	35.2	40.7	None
A/P	34.2	32.4	€ = .99
A	25.8	24.9	NO
NR	4.7	1.9	AG/DG
			.63/.37

0.00

9. There is a natural rate of unemployment to which the economy tends in the long run.

D	31.9	22.0	Subst.
A/P	40.9	34.5	€ = .99
A	26.5	40.3	
NR	0.7	3.3	AG/DG
			.68/.32

.77/.23

(Table continues)

**TABLE 1. Continued**

Proposition	R <sup>a</sup>	2000 <sup>b</sup> (%)	1990 <sup>c</sup> (%)	Consensus '00 <sup>d</sup>	Consensus '90	p <sup>e</sup>
10. Changes in aggregate demand affect real GDP in the short run but not in the long run.	D	35.9	41.7	None	Modest	0.06
	A/P	30.9	32.6	€ = 1	€ = .97	
	A	28.9	21.4	NO	AG/DG	
	NR	4.4	4.3	AG/DG	.56/.44	
11. Rational expectations on the part of market participants play an important role in preventing significant swings in real aggregate output.	D	40.3	38.0	Modest	Modest	0.79
	A/P	35.2	37.1	€ = .97	€ = .97	
	A	20.5	21.4	AG/DG	AG/DG	
	NR	4.0	3.5	.58/.42	.61/.39	
12. In the short run, a reduction in unemployment causes the rate of inflation to increase.	D	48.7	41.1	Modest	Modest	0.02
	A/P	37.3	39.6	€ = .88	€ = .95	
	A	11.1	17.9	AG/DG	AG/DG	
	NR	3.0	1.4	.50/.50	.58/.42	
13. The level of government spending relative to GDP should be reduced (disregarding expenditures for stabilization).	D	50.3	38.2	Modest	Modest	0.00
	A/P	18.5	19.0	€ = .92	€ = .95	
	A	29.2	41.7	AG/DG	AG/DG	
	NR	2.0	1.1	.49/.51	.61/.39	

14. A large federal budget deficit has an adverse effect on the economy.	D	20.1	13.9	Subst.	Subst.	0.06
	A/P	39.6	45.9	€ = .96	€ = .91	
	A	39.9	39.0	AG/DG	AG/DG	
	NR	0.4	1.2	.80/.20	.86/.14	
15. Fiscal policy has a significant stimulative impact on a less than fully employed economy.	D	13.4	9.0	Subst.	Subst.	0.00
	A/P	44.3	32.0	€ = .91	€ = .81	
	A	39.6	57.9	AG/DG	AG/DG	
	NR	2.7	1.1	.86/.14	.91/.09	
16. If the federal budget is to be balanced, it should be done over the course of the business cycle rather than yearly.	D	9.4	17.4	Subst.	Subst.	0.01
	A/P	28.2	23.9	€ = .81	€ = .88	
	A	60.1	57.1	AG/DG	AG/DG	
	NR	2.4	1.5	.90/.10	.82/.18	
17. Surpluses in the federal budget should be used to retire the national debt.	D	17.1		Subst.		
	A/P	45.0		€ = .94		
	A	36.6		AG/DG		
	NR	1.3		.83/.17		
18. Management of the business cycle should be left to the Federal Reserve; activist fiscal policy should be avoided.	D	28.2		Modest		
	A/P	35.2		€ = 1		
	A	35.6		NO		
	NR	1.0		AG/DG		
				.72/.28		

(Table continues)

**TABLE 1. Continued**

Proposition	R <sup>a</sup>	2000 <sup>b</sup> (%)	1990 <sup>c</sup> (%)	Consensus '00 <sup>d</sup>	Consensus '90	p <sup>e</sup>
19. Inflation is caused primarily by too much growth in the money supply.	D	16.8	25.2	Subst. € = .93	Subst. € = .98	0.02
	A/P	32.2	31.1			
	A	49.0	42.3			
	NR	2.0	1.3	AG/DG .83/.17	AG/DG .74/.26	
20. The Federal Reserve has the capacity to achieve a constant rate of growth in the money supply if it so desired.	D	31.5	31.7	Subst. € = .97	Modest € = .99	0.39
	A/P	40.9	38.7			
	A	22.2	27.4		NO	
	NR	5.4	2.2	AG/DG .67/.33	AG/DG .68/.32	
21. The Federal Reserve should focus on a low rate of inflation rather than other possible goals such as employment, or economic growth.	D	27.9		Subst. € = .99		
	A/P	29.2				
	A	41.3				
	NR	1.7		AG/DG .72/.28		
22. Lower marginal income tax rates reduce leisure and increase work effort.	D	30.9	39.9	Subst. € = .98	Modest € = .99	0.02
	A/P	42.3	33.5			
	A	24.5	25.6			
	NR	2.4	0.9	AG/DG .68/.32	AG/DG .60/.40	



23. Reducing the tax rate on income from capital gains would encourage investment and promote economic growth.	D	36.9	43.7	None	Modest € = .97  AG/DG .56/.44	0.2
	A/P	32.9	30.6	€ = .99		
	A	28.5	24.6	NO		
	NR	1.7	1.1	AG/DG .62/.38		
24. Appropriately designed fiscal policy can increase the long-run rate of capital formation.	D	14.4		Subst.		
	A/P	39.9		€ = .92		
	A	43.6		AG/DG		
	NR	2.0		.85/.15		
25. The distribution of income and wealth in the U.S. has little if any impact on the overall rate of economic growth and stability.	D	51.3		Modest		
	A/P	30.9		€ = .89		
	A	15.1		AG/DG		
	NR	2.7		.47/.53		
26. The increasing inequality in the distribution of income in the U.S. is due primarily to the benefits and pressures of a global economy.	D	72.8		Strong		
	A/P	16.1		€ = .66		
	A	8.7		AG/DG		
	NR	2.4		.25/.75		
27. The distribution of income in the U.S. should be more equal.	D	31.5	31.6	Modest	Subst. € = .99  AG/DG .68/.32	0.91
	A/P	27.9	27.1	€ = .99		
	A	38.9	40.9	NO		
	NR	1.7	0.4	AG/DG .68/.32		

(Table continues)

**TABLE 1. Continued**

Proposition	R <sup>a</sup>	2000 <sup>b</sup> (%)	1990 <sup>c</sup> (%)	Consensus '00 <sup>d</sup>	Consensus '90	p <sup>e</sup>
28. The redistribution of income within the U.S. is a legitimate role for government.	D	16.8	25.2	Subst. € = .93	Subst. € = .98	0.93
	A/P	32.2	31.1			
	A	49.0	42.3			
	NR	2.0	1.3	AG/DG .83/.17	AG/DG .74/.26	
29. There are relatively few compensation and promotion differentials between men and women that cannot be explained by differences in productivity and/or career choices.	D	39.3		None € = .99		
	A/P	28.2				
	A	31.2		NO		
	NR	1.3		AG/DG .60/.40		
30. Minimum wages increase unemployment among young and unskilled workers.	D	26.5	17.5	Subst. € = .97	Subst. € = .83	0.00
	A/P	27.9	19.5			
	A	45.6	62.4			
	NR	0.0	0.6	AG/DG .73/.27	AG/DG .82/.18	
31. The persistence of poverty is due more to a breakdown of the family unit than to a general lack of economic opportunity.	D	46.3		Modest = .96		
	A/P	27.2				
	A	24.2				
	NR	2.4		AG/DG .53/.47		

32. Tax policy has a significant impact on the likelihood a family unit will remain intact.	D	74.5	Strong
	A/P	17.4	€ = .63
	A	6.4	
	NR	1.7	AG/DG .24/.76
33. Welfare reforms which place time limits on public assistance have increased the general well-being of society.	D	23.1	Subst.
	A/P	42.0	€ = .98
	A	33.2	
	NR	1.7	AG/DG .76/.24
34. The Earned Income Tax Credit program should be expanded.	D	18.5	Subst.
	A/P	32.9	€ = .95
	A	42.6	
	NR	6.0	AG/DG .80/.20
35. The competitive model is generally more useful for understanding the U.S. economy than are models of imperfect competition and other game theoretic models.	D	40.6	Modest
	A/P	31.9	€ = .97
	A	21.8	NO
	NR	5.7	AG/DG .66/.34
			None € = 1
36. Pollution taxes or marketable pollution permits are a more economically efficient approach to pollution control than emission standards.	D	6.0	Modest
	A/P	29.9	€ = .75
	A	63.1	Strong
	NR	1.0	AG/DG .94/.06

(Table continues)

**TABLE 1. Continued**

Proposition	R <sup>a</sup>	2000 <sup>b</sup> (%)	1990 <sup>c</sup> (%)	Consensus '00 <sup>d</sup>	Consensus '90	p <sup>e</sup>
37. Antitrust laws should be enforced vigorously to reduce monopoly power from its current level.	D	26.9	29.8	Subst. ε = .98	Modest ε = 1	0.14
	A/P	42.6	35.9		NO	
	A	28.2	33.4		AG/DG	
	NR	2.3	0.9	AG/DG .73/.27	AG/DG .70/.30	
38. Compared to traditional fee-for-service health care, managed care has increased the general welfare of society.	D	42.6		Modest ε = .91		
	A/P	37.6				
	A	13.4				
	NR	6.4		AG/DG .54/.46		
39. Economic evidence suggests there are too many resources in American agriculture.	D	25.5	20.6	Modest ε = .99	Subst. ε = .92	0.00
	A/P	32.2	22.9			
	A	33.9	50.6	NO	AG/DG .78/.22	
	NR	8.4	5.8	AG/DG .72/.28		
40. Reducing the regulatory power of the Environmental Protection Agency (EPA) would improve the economic efficiency of the U.S. economy.	D	58.7	59.0	Modest ε = .85	Modest ε = .84	0.09
	A/P	20.5	27.1			
	A	16.4	12.4		AG/DG .40/.60	
	NR	4.4	1.5	AG/DG .39/.61		

41. The U.S. has entered a new industrial revolution in which higher rates of economic growth can be maintained without inflationary pressures.

D 34.2 Modest  
 A/P 45.6  $\epsilon = .93$   
 A 16.1  
 NR 4.0 AG/DG  
 .64/.36

42. Managerial, information and other technological advances have significantly lessened the severity of or fundamentally eliminated the business cycle.

D 58.1 Subst.  
 A/P 28.2  $\epsilon = .80$   
 A 8.7  
 NR 5.0 AG/DG  
 .39/.61

43. Internet delivery and distance education will significantly reduce the demand for academic professionals in the not-too-distant future.

D 78.9 Strong  
 A/P 13.1  $\epsilon = .57$   
 A 6.7  
 NR 1.3 AG/DG  
 .20/.80

44. Industry specific Internet-based business exchanges and other emerging information technologies are likely to increase collusive behavior among firms.

D 63.1 Subst.  
 A/P 22.5  $\epsilon = .80$   
 A 11.1  
 NR 3.4 AG/DG  
 .35/.65

<sup>a</sup>The possible responses are: D = generally disagree, A/P = agree with provisos, A = mainly agree, NR = no response.

<sup>b</sup>Records the frequencies of responses from the 2000 sample.

<sup>c</sup>Records the reweighted frequencies of responses from the 1990 Alston, Kearl, and Vaughan sample.

<sup>d</sup>Columns 5 and 6 report first the consensus index indicating strong, substantial, modest or no consensus; second, the entropy index,  $\epsilon$ ; third, a chi-square test of a uniform distribution of responses where an entry of  $N_0$  indicates that the null hypothesis cannot be rejected at the .10 Type I error level; and fourth, the conditional percentages of broad agreement (AG) and disagreement (DG).

<sup>e</sup> $p$  value for the chi-square test of identical distributions of responses for the 2000 and 1990 surveys.

For the 24 propositions common to both the 1990 and 2000 surveys, we conducted a goodness-of-fit chi-square test. Column 7 contains the  $p$  value at which the null hypothesis could be rejected. A rejection of the null hypothesis indicated a change in the distribution of responses over time but did not indicate the direction of the change.<sup>11</sup>

### DEGREE OF CONSENSUS, 2000 SURVEY

For 8 of our 44 propositions, we concluded strong consensus. For 18 propositions, we found substantial consensus, and for 13 propositions, we found modest consensus. A conclusion of no evidence of consensus was found for only 4 of the 44 propositions in our survey. Is this a high degree of consensus? Each reader is invited to draw his or her own conclusion, but for a profession characterized as exhibiting a propensity for disagreement, it may be surprising that the incidence of no consensus was not much higher.

Interestingly, the conclusions of strong consensus were comparatively concentrated in the area of international economics: the responses to five of the eight propositions dealing with the implications of a global economy exhibited strong consensus (numbers 1, 2, 4, 6, 26). Specifically, there was strong agreement with the propositions that restraints on free trade reduce welfare (2) and that market-determined, flexible exchange rates are effective (1). There was also strong disagreement with the propositions that increasing globalization threatens national sovereignty in environmental and labor standards (4), that U.S. trade deficits are a result of nontariff trade barriers (6), and that the increasing inequality in the U.S. distribution of income is caused by the pressures of a global economy (26).

Did a difference in the extent of consensus appear when we compared macroeconomic and microeconomic propositions? Although the conclusion of strong consensus was not found for any of the 18 propositions that had macroeconomic contexts (8–25), we found substantial consensus for 10 propositions and modest consensus for 5 propositions. For 3 macroeconomic propositions (8, 10, 23) we concluded no consensus. It is interesting to note that these three macroeconomic propositions embodied either self-correcting or supply-side sentiments. By comparison, we found strong consensus for 2 of the 12 microeconomic propositions (29, 40), substantial consensus for 4, modest consensus for 5, and no consensus for only 1 proposition. These results suggested that both strong consensus and modest consensus are more likely to emerge for microeconomic propositions. By comparison, substantial consensus or no consensus are more likely to emerge for macroeconomic propositions. Thus, like those of previous studies, our results suggested generally lower degrees of consensus for macroeconomic propositions.

For the nine clearly normative propositions, we found substantial consensus for six and modest consensus for three propositions. All propositions for which we concluded strong consensus were positive in nature, so it was somewhat surprising that all four propositions for which we found no consensus were also positive in nature. These results suggest some commonality of views within the profession for normative propositions.

The 2000 survey included four propositions (41–44) on the concept of the New Economy, widely discussed in the media and economic research papers. Although economists substantially agreed with the proposition that managerial, information, and other technological advances have significantly lessened the severity of or have fundamentally eliminated the business cycle (42), only modest agreement existed for the proposition that the United States has entered a new industrial revolution in which higher rates of economic growth can be maintained without inflationary pressures (41). Strong disagreement existed concerning the proposition that the demand for academic professionals will weaken because of distance learning and Internet delivery (43), and substantial disagreement with the proposition that Internet-based exchanges may facilitate collusion (44).

### CHANGES IN RESPONSE PATTERNS OVER TIME

Of particular interest is the comparison of response patterns for the 24 propositions included in both the current and the Alston, Kearn, and Vaughan surveys because such a comparison may identify important shifts in opinion within the economics profession. In column 7 of Table 1, we report the *p* value from a chi-square goodness-of-fit test of the 1990 and 2000 survey responses. For 15 of the 24 propositions, the hypothesis of identical response patterns at the two points in time can be rejected at a .10 Type I error level.

Does this represent a significant shift of the extent of consensus within the profession for this set of comparable propositions? The propositions (by number from Table 1) are listed in Table 2 by consensus index for the 1990 and the 2000 samples. The distribution of opinion for international and distributional propositions appears comparatively stable over the last decade in comparison with macro- and microeconomic propositions. As indicated in Table 2, those propositions showing a drop in the level of consensus are relatively concentrated in macroeconomics (8–25). The dynamics of opinion in macroeconomics is particularly interesting. Specifically, we found evidence of a shift toward more agreement with monetarist and new classical or supply-side-based propositions. That is, our survey found more agreement with the propositions of the long-run invariance of GDP (Gross Domestic Product) to changes in aggregate demand (10) and

**TABLE 2. Changes in the Degree of Consensus**

Index	1990	2000
Strong	1,2	1,2, <b>36</b>
Substantial	9,14,15,16,19,27,28 30, <b>36</b> 39	9,14,15,16,19, <b>20,22</b> ,28,30,37
Modest	7,8, <i>10</i> ,11,12,13, <b>20,22</b> ,23, <b>37</b>	7,11,12,13,27, <b>35</b> ,39,40
None	<b>35</b>	<i>8,10</i> ,23

*Note:* An italicized number indicates a drop, and a bold face number indicates an increase in the level of consensus index over time.

of inflation as primarily a monetary phenomenon (19). There was less agreement with propositions of a short-run Phillips curve effect (12) and of the stimulative impact of fiscal policy on an underemployed economy (15). We found more agreement with the proposition that lower marginal tax rates increased work effort (22) but no significant change in the proposition that reductions in the tax on capital gains promoted economic growth (23). However, we would not characterize these results as suggesting that the profession has completely abandoned Keynesian sentiments. In particular, we found less agreement over time with the normative proposition that government spending should be reduced relative to GDP (13) and more agreement with the proposition that the federal budget ought to be balanced over the course of the business cycle (16). In addition, there was no significant change in distribution of opinion for the normative propositions that the distribution of income in the United States should be more equal (27) and that the government has a legitimate role in the redistribution of income (28). Thus, in the macroeconomic area that Kearl et al. (1979) characterized as exhibiting the weakest consensus but also the most interesting area from the public's perspective, our results suggested that low consensus was driven by an emerging balance of Keynesian, Monetarist, and supply-side views.

In the area of microeconomics, we observed greater agreement with the proposition that pollution taxes or marketable pollution permits were economically efficient relative to emission standards (36). It appeared that profession had increased its embrace of market-oriented public policy approaches to society's production problems, a result in line with the positive textbook treatments of such permit programs under the Clean Air Act of 1997 (e.g., Callan and Thomas 2000, 360). There was significantly less agreement with the propositions that the competitive model is more useful for understanding the U.S. economy than models of imperfect competition (35) and that minimum wages increase unemployment (#30). It is likely that the recent research and debate concerning the effect of a minimum wage increase on employment have shifted economists' opinion toward less agreement (Card and Krueger 1995; 2000; Neumark and Wascher 2000). This result is a good example of how the survey results can be used as a springboard to discuss alternative approaches to economic issues in a principles class. In fact, Krueger (2001) writes about the pedagogical challenges of the recent minimum wage research. He describes the recent controversy as "an excellent opportunity for teaching introductory economics."

## DISCUSSION AND CONCLUSION

Our results suggest that, although a significant degree of consensus exists among economists on many propositions, economists seldom speak with strong consensus. Furthermore, the views of the profession as a whole have been rather fluid over time. Unfortunately, our data do not allow us to assign comparative weights to the possible causes for this migration of views: the dynamics of entry and exit within the profession, the empirical and theoretical advances of the last decade, or the experience of the economy and various policies.

A general conclusion of our study is that U.S. economists embrace the gener-



al efficiency of the market approach to society's production and distribution problems. It also appears that the degree of skepticism within the profession toward the potential allocative efficiency of market-based approaches seems to have weakened over the past decade. Nowhere is this more evident than in the area of international economics where the efficiencies of open economies are firmly embraced. Equally interesting is the assessment of the potential costs associated with the liberalization of international trade and capital flows: a degradation of national labor and environmental standards, large trade deficits, international financial instability, and an increasing degree of inequality in the distribution of income. Economists largely disagree that such costs are significant or even existent. Given the recent rise in the controversy surrounding the World Trade Organization, the opportunities for open classroom discussion seem significant. Using the results of this survey could lead to an exploration of what economists see as the implications of an open economy that may be lacking or hidden in the analyses of the popular press.

We found mixed results in the area of macroeconomics that was driven by an ongoing shift in attitude on macroeconomic issues away from what could be considered support for traditional Keynesian or mixed-economy propositions. In particular, we found an increase in support for supply-side and monetarist propositions over the past decade. Although there has been an increase in agreement with propositions associated with the long-run macroeconomic equilibrium and growth-path invariance, no consensus was found for those propositions that restrict the options of macroeconomic policymakers or that narrow the focus of policy institutions to a specific goal. Perhaps the characterization of the profession that emerges here is that both demand- and supply-side considerations matter and that policy options are available that can impact both.

We have left many of the microeconomic propositions without discussion. The propositions for which intertemporal comparisons can be made suggest that although the profession as a whole continues to embrace the efficiency of the market, there is a trend toward an increased appreciation or awareness of the view that the attributes of individual markets often require models more sophisticated than perfect competition. In addition, there is the suggestion that empirical research affects the views of the profession, as evidenced by the shift in views concerning the minimum wage. The microeconomic propositions that are new to this study were drawn mainly from debates and changes in the public policy arena. Our motivation here is to represent propositions that appear current in the minds of the public rather than presenting technical propositions drawn from recent advances in modeling or empirical work. We invite readers to draw their own judgments and conclusions, not only for this subset of propositions but for those for which we offer our own interpretations.

#### NOTES

1. The Alston, Kearl, and Vaughan propositions have been used in a number of surveys to facilitate comparisons among data sets. For example, Frey et al. (1984) circulated a subset of the Alston, Kearl, and Vaughan propositions to economists in four European nations and found significant differences in the opinions of European and U.S. economists. Ricketts and Shoemith (1992)

extended this line of inquiry with a survey of U.K. economists. Becker, Walstad, and Watts (1994) used the basic Alston, Kearnl and Vaughan set of propositions to compare the views of economists, economic educators, teachers, and journalists. Fuller, Alston, and Vaughan (1995) circulated a subset of the Alston, Kearnl, and Vaughan propositions to delegates of the 1992 national political conventions. The survey technique has also been extended to explore opinions within fields of economics. For example, Fuchs, Krueger, and Poterba (1998) surveyed labor and public policy economists, Whaples (1995) surveyed economic historians, and Whaples (1996) surveyed labor economists.

2. The American Economic Association (1997) reported statistics on the type of employment of their membership. Of the 74 percent of AEA members who reported their employment, 64.9 percent were academic, 9.5 percent were government, 23.1 percent were private, and 2.5 percent were retired. Thus, relative to the composition of the AEA membership, our sample appears somewhat overweighted with government and underweighted with academic economists.
3. *Relative entropy*,  $e$ , is the observed entropy value divided by the maximum possible entropy for the number of possible outcomes where entropy is the sum of the probability of a particular outcome multiplied by the  $\log_2$  of the probability, that is,  $(-p_i \log_2 p_i)$ .
4. When no response is included as a fourth category, complete entropy requires a uniform distribution of responses, where 25 percent must choose each response, including no response. Because the percentage of no responses is much lower for each proposition, this imparts a downward bias to the entropy index.
5. We thank the associate editor and an anonymous referee for this point.
6. With three alternative responses, the maximum possible entropy would result from a distribution of 33.33 percent in each response category. Thus, in the case of no consensus, it will be 1. If 90 percent generally agree with a proposition, 5 percent agree with provisos, and 5 percent disagree, the relative entropy index is calculated as 0.36. A response pattern of 70–15–15 will generate a relative entropy index of 0.75, and a response pattern of 65–20–15 generates an index of 0.81.
7. The chi-square test of a uniform distribution was conducted on three response categories—agree, agree with provisos, and disagree. The no response category was omitted. This test is equivalent to the null hypothesis of  $e = 1$  and presents a weaker criterion of consensus than  $e \leq 0.8$ .
8. We would like to thank an anonymous referee and the associate editor for suggesting this measure of consensus.
9. See Jorgenson and Stiroh (2000) and Vatter and Walker (2001) for a discussion of the New Economy.
10. Excluding the 5 percent of our sample that were either retired or listed multiple occupations, our sample proportions were: 61.1 percent academic, 22.5 percent private, and 16.4 percent public employment. These are the percentages to which the Alston, Kearnl, and Vaughan sample was reweighted. When we dripped evolutionary economists who are classified by ideology rather than place of employment, results in Alston, Kearnl, and Vaughan sample proportions were: 78 percent academic, 10 percent private, and 11 percent public employment. Alston, Kearnl, and Vaughan (1992a) made a similar adjustment when reporting data in their table 2. Alston and Vaughan (1993) published a separate paper on the evolutionary economists only.
11. Dropping the evolutionary economists and reweighting the responses of the remaining Alston, Kearnl, and Vaughan sample to reflect the employment characteristics of the 2000 sample significantly changed the distribution of responses in table 1 of Alston, Kearnl, and Vaughan (1992a) for all but three propositions (9, 11, 27).

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