Global Warming, Kyoto, and Tradeable Emissions Permits

The Myth of Efficient Central Planning

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EXECUTIVE SUMMARY

In December 1997, the Clinton Administration signed the United Nations agreement on Global Climate Change, the Kyoto Protocol, to reduce a perceived threat of global warming. If ratified, Americans will have to reduce their emissions of CO_2 to 7 percent below 1990 levels by the year 2010 — a 35 percent reduction from baseline predictions in the absence of any abatement policies.

The Clinton Administration hopes to reduce the cost of complying with the Kyoto CO_2 targets by implementing a tradeable CO_2 permit plan. The government would establish an overall target level for CO_2 emissions and issue emission permits to utility companies and other emitters consistent with the target. The permits could be traded in the market. Each firm would reduce its CO_2 emissions wherever the cost of the reduction was less than the revenues that could be gained by selling the permits, theoretically achieving the nation's emission reductions by the least costly means.

Three important points need to be understood. First, the cost of global warming, if any, has not been and may never be established with any scientific precision. Second, consequently, it is not clear that preventing global warming is worth the cost of doing so; it may be better to live with it than to fight it. Third, tradable permits, while somewhat reducing the cost of cutting emissions, will not make a potentially very expensive proposition cheap, easy, or necessarily worthwhile.

For the same reasons that it is impossible to run an economy efficiently through central planning, it is impossible to design and implement a CO_2 reduction plan that will unambiguously make society better off.

A rigorous social cost/benefit analysis of the effects of global warming and alternative abatement strategies may be flatly impossible and must inevitably be arbitrary.

To do a cost/benefit analysis of this issue, the nature and amount of the costs of global warming must be known, as well as the costs of avoiding the global warming. We know nothing of the former; the latter appear to be large.

To be certain of the costs and benefits, we must know how the resources that would have to be shifted to avert global warming would be used if no action were taken, and how people would value those resources in their alternative uses. We must be able to guess the choices and gauge the feelings of people not yet born, living during a period 50 to 100 years from now and beyond. There is no scientific way to determine this information; it is beyond our knowledge.

The global warming theory has generated a great deal of skepticism in the scientific community. Temperatures taken of the earth's atmosphere by satellites, available since 1979, show no climate change at all. The United Nation's own predictions of future warming have continuously become less severe. Estimates of global warming by the Intergovernmental Panel on Climate Change have gone from 3.3°C. [1990] to 2.8°C. [1992] to 2.0°C. [1996].

Even assuming that global warming is real, and that human activity has contributed to it, it is not clear that the results would be damaging. There are benefits of both increased CO_2 and a warmer earth that would have to be "netted out" from any costs of global warming. According to an article in *Science* (the journal of the National Academy of Sciences), "CO_2 is an essential nutrient for vegetation, an aerial fertilizer providing the carbon that plants use" and "doubling the CO_2 concentration is almost like doubling the rainfall as far as plant water availability is concerned." Crop yields will also be increased because global warming is likely to lengthen growing seasons.

Like a broad-based energy tax, a Tradeable Permit Plan would increase the costs of using energy and the costs of production in all sectors of the economy. According to the Department of Energy (DOE), if the terms of the agreement were put in place by the United States, the nation's gross domestic product (GDP) would be $397 billion less in the year 2010 than otherwise. DOE also estimates that there would be an 86.4 percent increase in the price of electricity, a 52.8 percent increase in the price of gasoline, and a 76 percent increase in the price of home heating oil.

Lower levels of economic growth and higher levels of unemployment result in a greater risk of death, due to the fact that a lower GDP would result in more people in poverty and more people unemployed. Both are considered significant health risk factors. These risks to life and health should be factored into any policy decision. Combining DOE's GDP loss estimates with risk analysis, it can be argued that the Kyoto agreement could cause as many as 42,000 additional deaths annually.

The need to combat greenhouse gas emissions and global warming has not been established. The issue should be approached with an acute awareness of the limits of man's ability to forecast the future; we cannot, with any accuracy, forecast the climate itself or the economic costs or benefits of action or inaction with respect to climate change. There should also be a high degree of skepticism concerning government's ability to increase social welfare by intervening in the marketplace. Sadly, the drafters of the Kyoto Agreement seem lacking in both qualities.

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The Kyoto Protocol

In December of 1997 at a meeting in Kyoto, Japan, the Clinton Administration signed the United Nations agreement on Global Climate Change, known as the Kyoto Protocol. This treaty, if ratified by the Senate, would commit the United States to drastic reductions in the emissions of greenhouse gases (GHGs), primarily carbon dioxide. In particular, the Clinton Administration has agreed that American citizens will reduce their emissions of CO_2 to 7 percent below 1990 levels by the year 2010. This constitutes a 35 percent reduction from baseline predictions of what CO_2 emissions would be in the absence of any abatement policies. CO_2 emissions are primarily a by-product of using fossil fuels for the generation of energy. Consequently, to meet these targets, Americans would have to reduce their consumption of energy, i.e., heating, air conditioning, gasoline, etc., by a similar proportion.

The purpose of the proposed treaty is to reduce a perceived threat of global warming. According to the "global warming hypothesis" (GWH), human induced increases in atmospheric CO_2, a natural greenhouse gas that traps heat in the atmosphere and therefore helps to keep the earth from freezing over,[1] will eventually lead to "excessive" warming of the earth. The average amount of global warming predicted by GWH advocates is three or four degrees Fahrenheit over the next 50 to 100 years. According to this hypothesis, global warming will cause a host of problems, including increased flooding and droughts, melting of polar ice caps, increased hurricanes and tornadoes, and increased incidence of insect-borne diseases such as malaria.

While some politicians and environmental advocates argue that global warming and its effects are already upon us,[2] more serious scientists who support the GWH argue that these effects, if they are to occur, will not do so until late in the 21st century. (We will discuss controversies surrounding the GWH below.) The argument being made is that the global community needs to act now, by reducing energy consumption, to prevent the potential climate changes and the costs to society that will go with them.

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[1] For a clear, easy to understand explanation of this process, see S. Fred Singer, *Hot Talk Cold Science*, (Oakland, CA: The Independent Institute, 1997).

[2] Recently, Vice President Al Gore claimed that there was a 1-in-1000 chance that the fires in Florida in the spring of 1998 were *not* caused by global warming. There is no scientific evidence for this and when physicist Fred Singer contacted the Vice President's office for the source of this statistic, they could not provide it.

The Economics of Limiting Emissions

From the perspective of economic efficiency and social welfare, the Kyoto CO_2 emissions targets can only be viewed as arbitrary. The primary question that must be addressed is what is the Kyoto accord attempting to accomplish? Presumably, the ultimate goal of such a policy is to make people better off, i.e., to bring about a more favorable state of affairs than would occur in the absence of the CO_2 reductions. Emissions reduction is not an end in itself and neither is reducing the probability that temperatures will be three or four degrees Fahrenheit warmer 50 to 100 years from now. To support the Kyoto agreement, it would have to be argued that people will prefer the world that they would get with reduced CO_2 levels to the world that would arise if nothing is done. Ultimately, this is what is meant when economists argue that the benefits of a policy such as this one outweigh the costs.

For the same reasons that it is impossible run an economy efficiently through central planning, it is impossible to design and implement a CO_2 reduction plan that will unambiguously make society better off. In the jargon of economics, not only the plan but the theory behind it is "non-operational". This is because the information problems that would plague the designers of any CO_2 emissions policy are identical to those that plague central planners in a socialized economy. No market can be centrally planned in isolation from all other markets, and this is especially true of a market as broad-based as energy. Yet, this policy is ultimately about the central planning of energy production and consumption, not just nationally, but worldwide. A planned "efficient" outcome would, therefore, have to account for changes in all markets, both nationally and internationally.

What Must Be Known or "Let's All Play Pretend"

The premise behind all CO_2 abatement strategies and, indeed, the entire Kyoto Protocol, is that "society" needs to bear costs today, and in this case very significant costs, in order to avoid even greater costs 50 to 100 years from now. The question then arises: What properties would any strategy have to have in order for it to bring about this intended result?

Before a non-arbitrary plan to limit CO_2 emissions to an optimal level can be implemented, there are serious questions of science that must be answered. We need to know a lot more concerning the connections between CO_2 emissions, increased levels of CO_2 in the atmosphere, increased temperatures and the ecological effects of those higher temperatures. It should be pointed out that this is not an easy task.

For example, predictions of the GWH depend on particular levels of CO_2 that accumulate in the atmosphere. Consequently, we need to know the relationship between current emissions (a flow) and eventual total accumulations (a stock). But the only thing that seems to be known with certainty is that there is not a one-to-one relationship between amounts of CO_2 emitted and the amount that is accumulated. Indeed, a recent study in *Science*, the journal of the American Academy of Sciences, has concluded that all of the CO_2 being emitted by the U.S. and Canada

is being absorbed by plants and vegetation.[3] If this study is accurate, then there would be no need for the United States to pursue any CO_2 reduction policy, even if one accepts the GWH. Reductions in CO_2 emissions by the United States and Canada would have no effect on the levels of CO_2 that are accumulated globally. According to one scientist from the Max Planck Institute for Biogeochemistry in Germany, if these findings are accurate then "the most obvious conclusion [would be that] there's no need for the U.S. and Canada to curb emissions."[4]

Furthermore, recent studies suggest that the Kyoto accord, even with 100 percent compliance by all parties to the treaty, would have a negligible effect on global temperatures. One study has argued that Kyoto-related reductions in CO_2 emissions would cause temperatures to be .07°C (.13°F) lower than otherwise. This is a reduction that would be undetectable with land based thermometers.[5] One explanation for this could be rooted in a point made in *Science*, that the reductions in CO_2 brought about by Kyoto "won't prevent total greenhouse emissions from rising ... the cuts will be swamped early in the next century by increases in emissions from developing nations such as China and India ..."[6] The suggestion is that the marginal reductions in CO_2 emissions in the developed world not make enough of a difference in the rising world total to have a meaningful impact on the climate.

The point of this discussion is to suggest that global warming is a highly controversial and far from settled subject in the scientific community. Opinions among respected scientists range from a complete rejection of the GWH, i.e., human-induced increases in CO_2 are likely to have no negative impact on humanity[7], to complete acceptance of the GWH and all of the negative ramifications associated with it. The assessment of disputes in this area are well beyond the scope of this paper and the expertise of this author.

For purposes of this discussion, though, it will be assumed that these technical questions have been answered, that the GWH is correct, and that the threat is real. The economic issues to be addressed here do not depend on resolving the scientific disputes.

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[3] S. Fan, M. Gloor, et. al., "A Large Terrestrial Carbon Sink in North America Implied by Atmospheric and Oceanic Carbon Dioxide Data and Models," *Science*, Vol. 282, October 16, 1998, pp. 442-446.

[4] Martin Heimann as quoted by Jocelyn Kaiser in "Possibly Vast Greenhouse Gas Sponge Ignites Controversy," *Science*, Vol. 282, October 18, 1998, p. 387.

[5] Thomas Wigley, "The Kyoto Protocol:CO_2, CH_4, and Climate Implications," *Geographical Research Letter*, Vol. 25, 1998, as cited in Patrick J. Michaels, "Long Hot Year: Latest Science Debunks Global Warming Hysteria," *Policy Analysis* No. 329, (Washington, D.C.: CATO Institute, December 31, 1998).

[6] David Malakoff, "Thirty Kyotos Needed to Control Warming," *Science*, Vol. 278, December 19, 1997, p. 2048.

[7] Some even argue that the effects will be primarily positive; more on this view below.

Even if a clear scientific relationship between various levels of CO_2 emissions and various climatic outcomes could be established, it would tell us nothing about whether public policies should be implemented to achieve one level of emissions and set of outcomes as opposed to another. In order to reach such a conclusion about public policy, a long series of questions relating to the economic results of any plan would have to be asked and answered. But the answer to most of these questions cannot be known, either practically, or in many cases, even conceptually. In other words, even if problems with the science can be overcome, from the perspective of economics, it will be impossible to implement a plan that is anything but arbitrary.

Estimating the (Net) Costs to be Avoided: Who are We Kidding?

To reiterate, the basic premise is that the Kyoto agreement should result in net social benefits when compared to a world where CO_2 abatement is not undertaken, i.e., that the costs avoided are greater than the costs incurred. Measuring and comparing such costs and benefits does not sound like too onerous a task, and indeed many economists tend to see the provision of such information as the role of economics in public policy analysis. To suggest that scientific cost-benefit analysis cannot guide us in many, if not most, areas of public policy is seen by many economists as heretical. As a staunch critic of the Kyoto agreement has argued with respect to implementing the treaty:

> "If the cost of acting exceeds the gain from doing so, no steps are warranted. On the other hand, if the benefits from initiating a program to reduce the possibility of warming are greater than the expenses, the policy should be adopted. *Logically, no reasonable being can oppose cost/benefit analysis* ..."[8] (Emphasis added.)

In fact though, a "reasonable being" could easily conclude that a rigorous social cost/benefit analysis of the effects of global warming and alternative abatement strategies may be flatly impossible and inevitably arbitrary.

What would it mean to know the costs or even to estimate the costs associated with future global warming? First, it must be recognized that the economic concept of *costs* relates to the value or satisfaction that people would receive from *opportunities that they give up* when they make *choices* -- what economists call *opportunity costs*.[9]

What is the choice that confronts us in dealing with global warming? Remember, we are assuming that the problem is real, that we do *not* have the choice of consuming energy in

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[8] Thomas Gale Moore, *Climate of Fear: Why We Shouldn't Worry About Global Warming*, (Washington, D.C.: Cato Institute, 1998).

[9] The best exposition of this in the economics literature is Nobel Laureate James Buchanan's *Cost and Choice*, (Chicago: Marham Press, 1969).

unlimited amounts without triggering global warming with unpleasant consequences. That is, we are assuming that we are faced with a real trade-off.

Our actual choices, then, are assumed to be two. We can refuse to change our behavior, spend nothing to avert global warming, bear the costs that global warming will (presumably) impose, and live with the residual net income and satisfaction. Alternatively, we can incur the costs of changing our behavior to avoid the global warming, and live with the net result of that course of action. We must try to determine which set of costs is lower, and which decision leads to the greater net satisfaction over time.

So, it is not enough to know that there will be negative consequences from global warming, which given the science is questionable. The entire justification for the Kyoto reductions must depend on comparative cost analysis. Therefore, the nature and amount of the costs of global warming must be known, as well as the costs of avoiding the global warming. We would need to know the monetary value of damage to life and property of future global warming, i.e., from flooding, droughts, disease, etc. Furthermore, we must know how the resources shifted to avert global warming and its negative consequences would have been used, and how people would have valued those alternative uses that they were forced to give up.

Put another way, the economically relevant cost would be the aggregate level of human satisfaction that would be obtained in a world in which actions were taken to avoid global warming-related problems minus the satisfaction level experienced in a world, over the same time period, where global warming problems were allowed to exist. Making such calculations is a tall order.

To assess the costs of global warming, we would first have to know the set of choices, in terms of resource allocation, that would be made under alternative scenarios of accepting global warming or preventing global warming by people, most of whom are not yet born, living during a period 50 to 100 years from now and beyond. Second, we would have to know how these future individuals would evaluate these alternative choices in terms of the net levels of satisfaction that each would bring forth. And finally, these evaluations would have to somehow be measured (what is the yardstick?) and then aggregated across all of these yet-to-be-born individuals.[10]

In light of this, what could it possibly mean to do a "social cost" estimate of the effects of future global warming and more importantly of the net effects of accumulated levels of CO_2? There are numbers being offered. One estimate touted by authors Stavins and Whitehead of the

[10] For an extended discussion of these issues, see Roy E. Cordato, *Social Costs, Public Policy, and Freedom of Choice*, Fiscal Issue No. 7, (Washington, D.C.: The Institute for Research on the Economics of Taxation, 1992). It should be noted that monetary prices cannot be used as a measurement of social or even individual opportunity costs unless one makes the highly unreasonable, and in cases where externality problems such as pollution are present, illogical assumption that the world is in the nirvana state of a perfectly competitive general equilibrium.

Progressive Policy Institute is $60 billion to $100 billion annually, or between 1 percent and 2 percent of U.S. gross domestic product (GDP).[11] What must these numbers be telling us in order for them to have meaningful economic content?

Assume that one possible element of the costs of future global warming is that it will lead to increased instances of malaria due to larger populations of mosquitos, particularly in underdeveloped countries. To assess these costs alone for the year 2075, the analysts in 1999 would have to have information that is unknowable. First, the analyst would have to know the state of technology with respect to the treatment or prevention of malaria in the year 2075. It would make no sense to assess even the monetary costs of treating or preventing malaria in 2075 in terms of current technology and current market prices, especially in light of what advances have taken place in medical technology and pest control over the last 75 years. As one analyst has pointed out:

> "We must imagine the effect of climate changes when most of the currently 'developing' countries will have had another 75 years of development, with the medical technologies and public health infrastructure of 75 years in the future, the dietary improvements and better access to health care that go with higher material standards of living, the potential eradication or severe limitation of vector-borne diseases ... Superimposing the possibility of climate change on today's technologies ... may give an altogether wrong view of the impact climate change will actually have in the year 2050, 2060, 2070 and so on."[12]

But let's assume that obstacles like this could miraculously be overcome, and that the 1999 analyst could calculate the increase in nominal costs that would have to be incurred as a result of the increased threat of malaria in 2075. These nominal costs would not be an adequate measure of the real opportunity costs imposed on the population. The real opportunity costs cannot be pinned down. In this case, they would be the value that the individuals in the population in 2075 would place on the alternative uses of the resources that are diverted into malaria treatment and/or prevention, and on the misery suffered by those who contracted the additional cases of the disease. All these values are subjective and speculative. It is subjective because value is ultimately about the feelings of individuals, which we cannot measure, and it is speculative because we are talking about unknown alternative resource uses that do not actually take place but would have taken place had they not been diverted to malaria-related uses.

The same kind of information would also have to be known with respect to the "costs" of additional flooding and droughts, rising sea levels and beach erosion, and whatever other

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[11] Robert Stavins and Bradley Whitehead, *The Greening of American Taxes: Pollution Charges and Environmental Protection*, (Washington, D.C.: The Progressive Policy Institute, 1992), p. 18.

[12] Thomas C. Schelling, "Costs and Benefits of Greenhouse Gas Reduction," American Council for Capital Formation Center for Policy Research *Special Report*, found at www.accf.org/costbebe.htm.

problems would allegedly be caused by global warming. Adding to the uncertainty is that this information pertains to decisions and choices made by people who are not yet born, and cannot be consulted. Regardless of how such figures might be calculated, they could not possibly capture the economically relevant costs of future global warming.

The above analysis would only be part of the picture. For the purpose of this discussion, the fact that costs will occur has been stipulated to, even though, in reality the science behind these costs is still quite controversial. Any assessment would have to be weighted by this scientific uncertainty, i.e., the probabilities that they would not occur at all, or would occur to a lesser extent than people speculated, in the absence of any abatement policy.

In addition, there are benefits of both increased CO_2 and a warmer earth that would have to be "netted out" from any costs of global warming. These benefits are real, ongoing, and, for future prognostications, much less uncertain. Consider the beneficial effects of CO_2 on agriculture and public health.

As was reported in the May 1995 issue of *Science*, "CO_2 is more than a greenhouse gas—it's also an essential nutrient for vegetation, an aerial fertilizer providing the carbon that plants use to make sugars, carbohydrates, and other compounds they need to live ... [I]n the agricultural realm, experimental evidence suggests that higher CO_2 concentrations may be a boon, helping many crops grow faster and yield more."[13] Furthermore, a more recent study in *Science* points out that CO_2 allows plants to use water more efficiently. "For the individual plant, water use efficiency is almost directly proportional to the level of CO_2 ... doubling the CO_2 concentration is almost like doubling the rainfall as far as plant water availability is concerned..."[14] The conclusion reached is that "[g]iven that the availability of water for agriculture is already becoming such a problem, this aspect ... of atmospheric change is a welcome one."[15] This has led one Duke University scientist to conclude that as much as 10 percent of the increased crop yields over the past 100 years is the result of higher concentrations of atmospheric CO_2.[16]

Global warming is also likely to lengthen growing seasons. To the extent that global warming delays the first frost in more northern climates, crop yields will be increased, and the population will be better-nourished. Furthermore, warmer climates are healthier climates. One economist has concluded that if the temperature were 4.5°F warmer in the U.S., 41,000 fewer

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[13] Elizabeth Cullota, "Will Plants Profit From CO_2?", *Science*, Vol. 268, May 1995, p. 654.

[14] This would imply that the doubling of CO_2 level which is expected by some to occur by the middle of the next century will mean that half as much water will be needed to grow the same amount of crops.

[15] Graham D. Farquhar, "Carbon Dioxide and Vegetation," *Science*, Vol. 278, November 21, 1997, p. 1411.

[16] *Op. cit.*, Cullota.

people would die each year.[17] The implication for any net social cost analysis is that the social benefits of higher crop yields (lower food prices and better nutrition) and a healthier population with fewer deaths would have to be subtracted from the costs of global warming.

Clearly, for the same reasons that the future costs could not be calculated, neither can these benefits be calculated. Certainly, there would be no meaningfully scientific way to net out these effects to determine an "optimal" amount of CO_2 emissions for today in order to produce an "optimal" concentration of CO_2 for the year 2100. In light of this, it should be clear that the CO_2 levels of 7 percent below 1990 that were agreed to in Kyoto are, indeed must be, completely arbitrary from the perspective of economic science.

Estimating the Costs of Kyoto

Calculating the costs of global warming, though, is only part of the problem. The costs of reducing emissions must also be considered. An emissions reduction policy is only justified if the costs of implementing it are less than the costs that would be incurred if CO_2 were allowed to rise unchecked. These cost comparisons are complicated by differences in certainty and timing. The costs associated with global warming will only materialize if the science behind it is sound, but it can be said with certainty that a reduction in CO_2 emissions to the levels agreed to in the Kyoto Protocol would force significant and costly reductions in energy usage. Furthermore, the costs of the reduction in energy usage would begin immediately, and the benefits, if any, of reduced global warming would only materialize 50 to 100 years from now.

A number of analysts have attempted to estimate GDP losses and other, strictly pecuniary "costs" associated with reducing CO_2 emissions to the levels required by the Kyoto accord. The two most widely cited estimates are from the Department of Energy and the WEFA Group (formerly Wharton Econometric Forecasting). According to the DOE, if the terms of the agreement were put in place by the U.S., GDP would be $397 billion less in the year 2010 than it otherwise would be[18], while WEFA estimates a reduction of $301 billion.[19] (All estimates from these studies are in 1996 dollars.)

First, it should be noted that the calculations cited above, even if they are accurate, do not measure the actual opportunity costs of the Kyoto agreement, for all of the same reasons that were mentioned in our earlier discussion. The true opportunity costs associated with the policy would relate to the satisfaction that we would receive form the goods and services that do not

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[17] *Op. cit.*, Moore, 1998, p. 120.

[18] U.S. Department of Energy, Energy Information Administration, *Impacts of the Kyoto Protocol on U.S. Energy Markets and the U.S. Economy*, October 1998, p. 219, at www.eia.doe.gov/oiaf/kyoto/pdf/appc.pdf.

[19] As reported in *Ibid.*, p. 215, and WEFA, Inc., *Global Warming: The High Cost of The Kyoto Protocol, National and State Impacts, 1998*, (Eddystone, Pa.: WEFA, Inc., 1998), p. 1.

get produced as a result of the policy. Indeed, none of these studies even attempt to identify the goods and services that would be forgone as a result of the treaty, nor can they. This would require information about the course of future technological change, entrepreneurial insights, and innovation. More importantly, it would require information about these variables both in the absence and in the presence of the policy. Clearly, this is information that we can only pretend to have. Even if this information could be "known", the analyst would somehow have to be able to assess the "aggregate amount of satisfaction", a concept that would first have to be defined in an "operational" way, that would be experienced in the presence and absence of the policy.[20]

The kind of information that would be necessary to make these precise interpersonal and intergenerational cost comparisons required to justify the policy is practically and conceptually impossible to gather. This does not mean, however, that the direction of the change cannot be known. If something is taxed you will get less of it. Therefore, it is certain that fewer goods and services will be produced if the Kyoto Protocol is implemented. The change associated with the policy must be both dramatic and negative. On the other hand, it is not clear from the scientific evidence that the effects of CO_2 build-up will be either dramatic or even negative. Indeed, as noted above, they may be positive.

The Mortality Costs of Kyoto: Driving Home the Point

As further illustration of the impossible information problems associated with justifying Kyoto on social welfare grounds, it has been argued that implementation of Kyoto will cost people their lives.[21] The argument stems from risk analysis which claims that with lower levels of economic growth and higher levels of unemployment comes a greater risk of death. As one study has argued, for every $9 million loss in GDP, there will be one death.[22] This is due to

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[20] Normally, the opportunity cost of a good or service is just slightly less, at the margin, than the price one is willing to pay for that product. One buys an incremental unit of the product of one's choice because one values it more than the incremental alternative uses of one's money, with the former just nudging out the latter. In the case of a mandated reduction in the use of energy, and a forced shift away from the consumption of energy-intensive products, however, the consumer's free choice is overruled by government edict, and the enforced changes in production and consumption may be far from marginal. The foregone resources and products may be valued much more highly (even after subtracting any presumed negative consequences of their use) than the second best resources and products that are substituted. In this case, the opportunity cost of the reduction in global warming may well exceed the alternative output that replaces it by a substantial margin. The alternative output, produced at high cost due to inefficient use of resources, will nonetheless be counted at face value as GDP. Looking only at the prices paid for these alternative products, however, will tell us nothing about how much real GDP has fallen, nor how much less satisfaction we derive from that output than the GDP we would have had in the absence of the government intervention.

[21] See Frank B. Cross, "Could Kyoto Kill? The Mortality Costs of Climate Policies," (Washington, D.C.: Competitive Enterprise Institute, 1998).

[22] Randall Lutter and John F. Morrall, "Health-Health Analysis: A New Way to Evaluate Health and Safety Regulation," *Journal of Risk and Uncertainty*, Vol. 8, 1994, p. 58.

the fact that a lower GDP will result in more people in poverty and more people unemployed. Both are considered significant health risk factors. Indeed, one study from the journal *Health and Physics* has argued that unemployment increases one's chances of death by 4 percent and reduces one's life expectancy by 1.4 years. "This is roughly ... equal to smoking 10 packs [of cigarettes] per day while unemployed."[23] People who are unemployed are more likely to have heart attacks, alcohol-related problems, and are less likely to have health insurance. In addition, they are more likely to commit suicide or be the victim of a homicide. With one study prepared by DRI/McGraw-Hill estimating annual job losses due to Kyoto at 1.4 million for the years 2000-2020, this agreement could pose a very serious health risk.[24]

Several studies have attempted to quantify the number of lives that might be lost if the United States implemented the Kyoto Protocol. Using WEFA GDP loss estimates, it has been calculated that the Kyoto agreement, if implemented, would cause 34,300 additional deaths annually by 2010.[25] Combining DOE GDP loss estimates with the risk analysis cited above (see note 22) it can be argued that the Kyoto agreement could cause as many as 42,000 additional deaths annually by the year 2010.[26] While the estimates may vary, the logic behind them is sound. The implications for any social cost analysis are devastating. The analyst must know not only the value that others in society would place on the future stream of output from individuals whose lives are lost as a result of the policy, but also the value that would be placed on the output of any future individuals (potential offspring) who are not born as a result of these premature deaths. In order to know the net social value of contributions of these individuals, the analyst would need to also know the amount and value of resources that these people would have used up in their lives as both producers and consumers. It should be obvious that any number that purports to be measuring these gains and losses would necessarily be arbitrary. This is without even approaching the issue of measuring the value of the lost lives to those who lose them, or what it could possibly mean to do so.

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[23] Bernard L. Cohen, "Catalog of Risks Extended and Updated," *Health and Physics*, Vol. 61, No. 3, September 1991, p. 321.

[24] DRI/McGraw-Hill, "The Impact of Carbon Mitigation Strategies on Energy Markets, the National Economy, Industry and Regional Economies," prepared for the United Mine Workers and Bituminous Coal Association, 1997.

[25] *Op. cit.*, Cross.

[26] *Op. cit.*, note 21, Cordato and Carter.

Tradeable Permits: Market Based Central Planning

Several policy measures for CO_2 abatement are being discussed, including what would have to be very steep carbon taxes on all fossil fuel using energy generation.[27] However, the approach that is most favored by the Clinton Administration and U.S. economists who are sympathetic to the GWH is some form of tradeable CO_2 permits. In theory, to implement a tradeable permit plan for CO_2, the relevant central authority, i.e., the U.S. government or United Nations, would first establish an overall target level for CO_2 emissions. As noted, while this has been done as part of the Kyoto accord, both from a scientific and economic perspective, this or any other target must be viewed as suspect if not completely arbitrary. Permits to emit CO_2, consistent with target emission levels, would then be distributed, possibly through a government run auction, to utility companies and others who would be deemed significant users or producers of fossil fuels, and therefore emitters of CO_2.[28] These permits could then be traded in the market and their price would be established by the forces of supply and demand.

Because companies could gain revenues by selling their permits, there would be an incentive for individual firms to find ways of reducing CO_2 emissions. Each firm would reduce its CO_2 emissions so long as the costs of the emissions reduction were less than the revenues that could be gained by selling the permits. Companies that are good at finding ways to reduce their emissions would be able to sell their permits to companies that face higher costs of cutting emissions, and are willing to pay for additional permits.[29] Because of its strong reliance on market mechanisms, this approach is often referred to as "market based."

Tradeable permit plans (TPP) for solving pollution problems tend to have broad appeal on both the left and right because of their flexibility and their use of market mechanisms for inducing emission reductions. Permit advocates economist Wallace Oates and Paul Portney at Resources for the Future argue that "without any direction from a central authority, emissions control would automatically be concentrated at the sources where it is least expensive."[30] But

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[27] See Roy E. Cordato, "Excises, Social Costs, and the Myth of Efficient Taxation: The Case of Carbon Taxes," *IRET Policy Bulletin*, No. 56, July 3, 1992 or "Climate Change and Carbon Taxes," Reason Foundation, forthcoming 1999.

[28] It is usually argued that, in order to reduce administrative costs, permits should be distributed and traded among users that are as far "up-stream" in the production process as possible rather than to end users. For example, permits should go to oil and gasoline refiners rather than to individual drivers, even though it is the drivers who actually burn the fuel and therefore generate the emissions.

[29] If a such a program were administered jointly by all parties to the treaty (an unlikely prospect given the current view of permits by the other signors), each country would be assigned a quota level of CO_2 emissions. The individual governments would then divide the rights to emit CO_2 internally and trade of permits would be carried out globally.

[30] Wallace E. Oates and Paul R. Portney, "Economic Incentives for Controlling Greenhouse Gases," *Resources*, Spring 1991, p. 13.

while TPPs may be market based in their operation, they are certainly not market instigated. In other words their origins are in government and they are ultimately a tool of public policy meant to implement a central economic plan. The policy itself is an attempt to thwart the results of an actual free market in energy and to transform energy generation from methods that have evolved as a result of the demand, resource scarcity, and technological conditions in the market to those that would be preferred by government agencies and politicians.[31]

A Tax By Any Other Name ...

First, it needs to be noted that the economic consequences of a TPP with its associated limit on emissions would be the same as those of a massive energy tax. As one economist has pointed out, "Carbon taxes could be imposed instead of tradable permits: there should be, in principle, no difference in the energy prices under the two alternative systems."[32] What this implies is that, like a broad-based energy tax, a TPP would increase the costs of using energy and the costs of production in all sectors of the economy. Indeed, the discussion above of the GDP losses due to Kyoto, reflects this fact.

A TPP, like a carbon tax, would cause an increase in the cost of using coal and oil and, therefore, all energy and energy sources, i.e., electricity, gasoline, heating oil, etc., that are derived from these resources. The DOE estimates that carbon permit prices will be $348 per ton in 2010 and the WEFA group estimates a price of $265 per ton. In other words, the effect on the price of using energy (energy cost plus permit price) would be the same as with a carbon tax that produced the same curtailment of energy use. The DOE estimates an 86.4 percent increase in the price of electricity, a 52.8 percent increase in the price of gasoline, and a 76 percent increase in the price of home heating oil. The restricted use and higher price of coal and oil would also affect the price of natural gas, which emits minimal levels of CO_2. Demand for natural gas would rise as people try to substitute it for coal and oil. According to the DOE estimate, there would be a 147 percent increase in the price of natural gas by the year 2010.[33]

Since energy is an input into every production process in the economy, a TPP would be equivalent to a broad-based tax on productive activity in general. One of the most basic principles in all economics is that if you tax something, you get less of it. Therefore, we are not simply talking about reducing energy use. A TPP will result in a reduction in output, productivity, and material human welfare across the economy. These effects will begin to take

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[31] See Roy E. Cordato, "Market Based Environmentalism and the Free Market: They're Not the Same," *The Independent Review*, Vol. 1, No. 3, Winter 1997, pp. 371-386.

[32] Margo Thorning, Chief Economist for the American Council for Capital Formation, in Congressional testimony, October 6, 1998, titled "The Kyoto Protocol: Impact of Climate Change Policy on U.S. Economic Growth and Environmental Quality," found at www.accf.org/Oct98test.htm.

[33] These estimates were obtained from a summary of these two studies, *Ibid.*, p. 6.

place immediately and will be cumulative over the next 50 to 100 years as our grandchildren wait for the alleged environmental benefits of the policy to kick in.

With so much uncertainty about costs and benefits, the idea that a TPP for CO_2 can be used to advance social welfare or enhance economic efficiency is insupportable. However, there is a second argument which is not based on economic efficiency but on what might be called "implementational efficiency." Some economists argue that a TPP would be the cheapest way to implement the Kyoto emission targets, putting aside any discussion of the appropriateness of the targets themselves. As even Kyoto critic and Hoover Institute Scholar, Thomas Gale Moore has stated, "[M]arketable quotas of carbon emissions could also be an efficient and low-cost method of reducing greenhouse gases and would, in principle, make meeting a particular emissions standard achievable."[34]

But even this argument, as limited as it is, has serious problems.[35] Let us leave aside the normative question as to whether economists should be complicit in advising the government how best to implement bad policy, while withholding judgement on the policy itself. The fact is, TPPs as global warming policy face serious logistical and practical problems on their own terms. The most daunting of these problems is to convince other countries to take part in the TPP. In particular, the European nations and Japan are against such a program and developing countries such as China, Mexico and India are exempt from the entire agreement.[36]

If a TPP were internal to the U.S., with no way to obtain credit for less expensive reductions in emissions abroad, the full required reduction in emissions would have to come from domestic sources at greater expense and with greater loss of output. A purely domestic TPP could impose more economic hardship than anticipated, and could actually do more harm than a carbon tax. This is because, under a rigid domestic emissions ceiling, there would be no opportunity to adjust total domestic energy use and emissions to accommodate changing circumstances. With a tax, however, producers and consumers could expand energy use and emissions when the benefits exceeded the tax, unless the government intervened to reset the tax to restore the original emissions levels. A domestic TPP may be better than rigid emission ceilings imposed arbitrarily, source by source through federal regulation, but it may be inferior to a fixed tax rate with some flexibility as to the level of domestic energy use and emissions.

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[34] Thomas Gale Moore, *Climate of Fear*: *Why We Shouldn't Worry About Global Warming*, (Washington, D.C.: Cato Institute, 1998), p. 8.

[35] For an excellent overview of many of these issues, see *The Impact of Climate Change Policy on Consumers: Can Tradeable Permits Reduce the Costs?*, (Washington, D.C.: American Council for Capital Formation, 1998).

[36] The permit approach is not popular among some governments in Europe and in Japan, which have been attempting to limit the role of such permits under the treaty. They may feel that nations selling permits would be taking credit for CO_2 reductions due to factors other than emission controls (such as reduced emissions in the former Soviet Union due to economic decline), or they may feel that U.S. industry would have a competitive edge if it could take advantage of a lower cost means of complying with the emissions standards.

It is generally thought that developing countries would be able to reduce emissions at relatively low cost. This is because they have taken very few steps in this direction to date and they are at a margin where low cost emissions reduction techniques are available. This would allow U.S. industries to purchase permits from these countries at relatively low cost. Consequently, it is important that the TPP program be truly international. The probability that these less developed countries would ever be part of the Kyoto agreement and a TPP is considered to be quite low, however. It is important to note that these countries currently account for 50% of world CO_2 emissions and that proportion is expected to grow to 75% by 2050.[37]

Even among the signers of the agreement, only the United States has shown any interest in a TPP. This major hurdle would have to be cleared before dealing with other implementation problems. For example, policing a TPP at the international level would be complicated at best and, at worst, would be an affront to national sovereignty. Most countries and industries would have an incentive to cheat on their emissions, which suggests that aggressive enforcement mechanisms would need to be put in place, with an international agency such as the United Nations as policeman. From a political standpoint, it is doubtful that American citizens would stand by silently while United Nations inspectors made tours of U.S. industries.

Other issues include questions concerning whether the permits should be auctioned off or given out initially. If they were auctioned off, then there would be economic consequences, since large sums of money (the auction price of the permits times the number of permits sold) would be transferred from the U.S. energy industry to the government. This is another sense in which the TPP would act like a tax. Revenues would be transferred from private sector allocation to public sector allocation and therefore bring about a overall reduction in efficiency with respect to the use of those resources. If the permits are to be given away, what should be the criteria? The possibility that political considerations would determine initial distribution is quite real, indeed almost impossible to avoid in the absence of a market mechanism.

Furthermore, emissions permits would need to apply to a specific time period. Questions about what that time period should be and whether or not "borrowing" from future time periods should be allowed would also have to be ironed out. In other words, would "banking" of unused permits be allowed for long run planning purposes and if so how would capital gains and losses on the value of permits be handled for tax purposes, both nationally and internationally, so as not to give different industries in different countries advantages over others? Would tax policy also have to be internationally coordinated?

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[37] Dr. Margo Thorning, "Climate Mitigation Policy and U.S. Economic Growth," testimony before the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs of the House Committee on Government Reform and Oversight, April 23, 1998, found at www.accf.org/Apr98test.htm.

The point here is that in spite of the appearance of formal elegance, the implementation of a TPP at the international level, which is the only level where such a policy would make any sense at all, would be an administrative quagmire.

Shaky Science

In order to keep the focus of this analysis on issues regarding the economics of global warming policy, we have, so far, assumed a scientific premise that is uncertain and controversial, namely that the GWH is correct. In fact, the GWH has generated a great deal of skepticism in the scientific community. The state of the science in this area was recently summarized in *Science*: "It is not at all clear yet that human activities have begun to warm the planet—or how bad greenhouse warming will be when it arrives."[38] Some skeptics have gone even further. Physicist Dr. Fred Singer at George Mason University has argued that the global warming problem "exists only in non-validated computer models and in the vivid imagination of environmental zealots."[39]

Several important points should now be made. First, the GWH does not hold up when tested against the actual climate record of the last 50 years, the period over which there has been the largest CO_2 build-up in the atmosphere. While global warming advocates are quick to argue that the average temperature of the planet has increased by almost 2°F. over the past 100 years, they typically fail to point out that all of that warming took place in the first 50 of those years. During the last 50 years, there has been no significant change in average temperatures. In fact, the most accurate data, temperatures taken of the earth's atmosphere by satellites, available since 1979, show no climate change at all. Scientists John Christy and Roy Spencer, award winning developers of the global satellite temperature data, have concluded from observations of both weather balloons and the satellite record that, "the validation is very strong, showing that in the last 20 years the atmospheric temperature has simply not risen."[40]

Even the most conservative predictions of climate models showing future global warming significantly overestimate the amount of warming that has actually occurred. The question then arises, if predictions of these models have been consistently unreliable when tested against the actual climate changes of the past, why should they be counted on to guide us through public policy questions relating to climate changes 50 to 100 years into the future? As *Science* Editor,

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[38] Richard Kerr, "Greenhouse Forecasting Still Cloudy," *Science*, Vol. 276, May 16, 1997, p. 1041.

[39] Fred Singer, "Trick or Treaty: An Energy Tax in Disguise," *The Washington Times*, July 1, 1997, p. A15. For a more extended discussion of science of global warming and climate change see *Op. cit.*, Singer, *Hot Talk, Cold Science*.

[40] John R. Christy and Roy Spencer, "Global Warming: Evidence from the Satellite Record," Environmental Studies Program, Competitive Enterprise Institute, Washington, D.C., from www.cei.org.

Richard Kerr has observed, "Climate modelers have been 'cheating' for so long it's almost become respectable."[41]

Furthermore, even the advocates of the GWH have been predicting less and less warming over the past decade. The United Nation's own predictions of future warming has continuously become less severe since 1990. As noted by Christy and Spencer, the U.N.'s Intergovernmental Panel on Climate Change (IPCC), "best estimates of global warming by 2100 continue to be revised downward: 3.3°C. [1990], 2.8°C. [1992], 2.0°C. [1996]."[42]

Conclusion: Politics, Not Economics or Science

> "This number [the costs of global warming] cannot be calculated until ... the environmental and economic impacts or injuries associated with the warming are assessed, and until a dollar value is placed on the estimated damages ... researchers simply don't know enough yet to perform the initial calculations."[43]

The overriding concern of this paper has been to argue that social cost analysis is incapable of devising a social welfare enhancing global warming policy. It is flatly impossible for researchers ever to know enough to perform any of the calculations that must be made to implement such a plan (calculations that even global warming advocates such as the World Resource Institute's Dower and Zimmerman admit are necessary.) The problem is the same one that plagues economic central planning of any kind. The information that needs to be obtained is both practically and conceptually unaccessible.

The fact that a TPP involves the use of market mechanisms to accomplish its policy goals obscures the fact that such a policy is still a means of implementing a central plan, one dictated, in this case, by a United Nations agreement. While policies such as TPPs are usually considered as an alternative to command and control regulations, in reality the command and control goals are maintained while attempting to use the advantages of markets to implement these goals less inefficiently.

The point to be made here is that a TPP or any other plan to implement drastic reductions in CO_2 emissions only has a chance of generating net benefits if, first, warming actually occurs and, second, if it occurs in a way that is detrimental. If warming does not occur, or if it is only slight, or if it occurs in such a way as to be beneficial in terms of agriculture and public health effects, then any plan to implement the treaty would be all costs and no benefits. At the present

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[41] Richard Kerr, "Models Get it Right—Without Fudge Factors," *Science*, Vol. 276, May 16, 1997, p. 1041.

[42] *Op. cit.*, Christy and Spencer.

[43] Roger C. Dower and Mary Beth Zimmerman, *The Right Climate for Carbon Taxes: Creating Economic Incentives to Protect the Atmosphere*, (Washington: D.C.: World Resources Institute, 1992), p. 13.

time, advocacy of the Kyoto agreement has two pillars, a scientific pillar that is, at best, uncertain and an economic efficiency-based pillar that is logically and operationally insupportable.

In light of this, a final question can be raised: Why does there seem to be a great deal of support for both the Kyoto agreement in general and a TPP for CO_2 in particular? There are two agendas being advanced that are separate from the questions addressed above; one is an ideological/social agenda, the second is a private profit, or more appropriately, "rent seeking" agenda. The former is expressed quite succinctly and candidly by Canada's Minister of the Environment, Christine Stewart, who recently stated that " ...[C]limate change [provides] the greatest chance to bring about justice and equality in the world."[44]

The fact is that because no developing countries, including China, are party to the Kyoto Protocol, implementation of the agreement will likely result in a massive transfer of wealth from people in wealthier nations to people, or more likely governments, in less developed countries (LDCs). This is because the agreement would raise the relative cost of production in the developed world, particularly for manufacturing and energy intensive industries, encouraging a reallocation of investment to less developed countries.

Another source of wealth transfer is that, if LDCs were brought into the agreement and made part of a TPP, the bulk of the purchases of permits would be made from LDCs by developed countries, especially the United States. This is because LDCs such as China have taken almost no steps to reduce carbon and other emissions. Because of this, they are at a margin where they could reduce emissions at very low costs per ton. On the other hand, the cost of making additional reductions for U.S. industries is relatively quite high, because they have already made significant advances in the area of energy efficiency and emission reductions as a result of the various Clean Air Act and CAFE regulations.

To make the tax analogy, a TPP program would be the equivalent of imposing an excise tax on U.S. industries and transferring the revenues to LDCs from whom the permits are purchased. Since these countries have socialist economies of one form or another, this transfer would likely be from U.S. private sector businesses and consumers to the treasuries of third world governments. For many social reformers, the Kyoto agreement is simply seen as a way of transferring wealth from the world's haves to the world's have-nots (or, at least, their governments).

The second reason for favoring the agreement also comes from its potential for benefitting some at the expense of others. First, there are European countries who, through very high energy taxes, have already made it relatively costly to engage in productive activities within their boarders. It is possible that past emissions reductions that are the result of these taxes will count

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[44] *Calgary Herald*, Dec. 15, 1998, quoted by Peter Stockland from interview with *Herald* editorial board. She also suggested that global warming may not be the issue claiming that "No matter if the science is all phony, there are collateral environmental benefits," *Calgary Herald*, Dec. 14, 1998, quoted by Peter Menzies.

toward their Kyoto targets. This would force countries like the United States who have relatively low energy taxes to give up their competitive advantage in this area.

Furthermore, certain domestic industries, including some sectors of the U.S. energy industry, also have a great deal to gain. Implementation of the Kyoto treaty by the United States would mean a reduction in the demand for coal and oil and an increase in the demand for natural gas and alternative energy sources such as solar, hydraulic, and corn (ethanol). Not surprisingly, individual companies and trade associations in several of these industries have come out in favor of the agreement. Indeed, the ethanol subsidy program, which was renewed last year, was argued for by industry representatives, in part, based on ethanol's CO_2 reducing potential.[45] As was pointed out recently to a conference of the Energy Efficient Building Association "[The Kyoto Treaty is] going to be great business for everyone at this conference ... by 2010, climate change will be driving every major energy-related investment."[46] Business organizations made up of potential Kyoto beneficiaries that have recently formed to support the accord include: The Business Environmental Leadership Council, The Business Council for Sustainable Energy, and The International Climate Change Partnership.[47]

Ideally, policy arguments and our ultimate decisions should be based on sound science and sound economics. But, clearly, it is important to realize that other factors are at work. These other factors may ultimately be more important than considerations of science and economics. Any massive reorganization of industry, such as that which is implied by the Kyoto accord, will have great potential for generating winners and losers, both domestically and internationally, and it is important to view the political process by which the accord will ultimately stand or fall in light of this important fact.

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[45] For an excellent discussion of this entire issue see Bruce Yandle, "Bootleggers, Baptists, and Global Warming," *PERC Policy Series*, No. PS-14, (Bozeman, MT.: Political Economy Research Center, November 1998).

[46] Remarks by former Energy Department official, Joseph Romm, as reported by Jonathan H. Adler, "Greenbacks: Businesses See Profits in the Kyoto Treaty," *National Review*, December 21, 1998, p. 26.

[47] *Ibid.*, pp. 26 and 28.

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Lundy Professor

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Professor Cordato has had numerous publications including a 1992 book, *Welfare Economics and Externalities in an Open Ended Universe*, published by Kluwer Academic Publishers. His academic articles have appeared in economic journals, political science journals and law reviews. His public policy analyses have been published by IRET, The John Locke Foundation, Citizens Against Government Waste, The Ludwig von Mises Institute, the Cato Institute, The Competitive Enterprise Institute and The Reason Foundation. Dr. Cordato has also had his work featured in numerous newspapers and periodicals such as *The Christian Science Monitor, The Washington Times, Investor's Business Daily, The Journal of Commerce, Tax Notes, The Congressional Record, The Orange County Register, The Freeman, Liberty Magazine, The Charlotte Observer, The Raleigh News & Observer*, and *Human Events*, to name only a few.

Professor Cordato has presented his research at the annual meetings of a number of professional organizations, including the Southern Economics Association, the Eastern Economics Association, the Western Economics Association, the Public Choice Society, the Society for the Development of Austrian Economics, and the Association of Private Enterprise Education. In August 1995, Cordato testified at hearings of the National Tax Commission, appointed by Senator Robert Dole and Representative Newt Gingrich, and chaired by former Secretary of Housing and Urban Development, Jack Kemp.

Dr. Cordato presently serves on the academic advisory boards of the Ludwig von Mises Institute, the John Locke Foundation, and the Heartland Institute.

The Lundy Chair
of
Business Philosophy
at Campbell University
and
The Adam Smith Club

Free Enterprise Education at Campbell University

The Lundy Chair of Business Philosophy at Campbell University was endowed in 1975 by Burrows T. Lundy, founder of Lundy Packing Company in Clinton, N.C. The purpose of the Lundy Chair is to promote the principles of free enterprise, individual liberty, and minimal government, not only on the campus at Campbell University, but in the community at large. The Chair's philosophy can be summarized in the words of Mr. Lundy spoken in 1977: "the free enterprise system is...the most productive and rewarding...it is also the most moral since it assumes as rights of the individual to possess the products of his labor, to exchange them for what he wants, to determine his own standard of living, and to consume what is his..."

Responsibilities of the Lundy Professor include teaching the Philosophy of Business (BA300) and advising the Adam Smith Club. In addition, the Lundy Professor is expected to publish in both the popular press and academic journals. Previous Lundy Chair holders have included: Dr. William H. Peterson, who founded the Adam Smith Club in 1977, Dr. Eric Brodin, and Dr. Orville Watts.

ABOUT IRET

IRET was founded in 1977 as a 501(c)(3) public policy research organization dedicated to the belief that constructive, free-market economic policies are essential for the nation's economic progress. To this end, IRET conducts research and analysis of the economic effects of tax, budget, and regulatory public policy initiatives. IRET is a leader in offering guidance to policy makers regarding fundamental tax reform that would eliminate the bias against saving and investment in the current tax system, including elimination of the estate tax, taxation of capital gains, and the double taxation of corporate income. IRET is also researching ways to replace Social Security with personal saving for retirement.

IRET has a reputation as a no nonsense resource for policy makers and opinion leaders. IRET relies on contributions from individuals, foundations, and corporations to perform its work. It accepts no government funding. IRET is the leading public policy institute in Washington focusing realistically on the growth aspects and economic consequences of federal policy changes.

IRET's founder, Norman B. Ture, was a distinguished tax advisor to Congress and served as Under Secretary of the Treasury for Economic Affairs in the Reagan Administration. Dr. Ture played a central role in the development of the Economic Recovery Tax Act of 1981. IRET's current President and Executive Director is Stephen J. Entin. Mr. Entin was Deputy Assistant Secretary for Economic Policy at the Treasury Department in the Reagan Administration. He prepared economic forecasts for the President's budgets, and the development of the 1981 tax cuts, including the "tax indexing" provision that keeps tax rates from rising due to inflation. Mr. Entin represented the Treasury Department in the preparation of the Annual Reports of the Board of Trustees of the Social Security System, and conducted research into the long run outlook for the system. He advised the National Commission on Economic Growth and Tax Reform (the Kemp Commission), assisted in the drafting of the Commission's report, and was the author of several of its support documents.

Prior to joining Treasury, Mr. Entin was a staff economist with the Joint Economic Committee of the Congress, where he developed legislation for tax rate reduction (the Kemp-Roth bill) and incentives to encourage saving. Mr. Entin is a graduate of Dartmouth College and received his graduate training in economics at the University of Chicago, majoring in macroeconomics, monetary policy, and international economics.