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Plenary Session, June 25, 1998

Professor William Baumol

Hope for the Environment: Free Enterprise and Other Economic Regimes

Good morning and thank you very very much for the invitation and the opportunity to appear in what must be one of everyone's favorite cities in the world, a sentiment to which my wife and I take no exception. We are delighted to be here once again.

Regrettably I am driven to begin by quarreling with our chairman: I heard him assert just a while ago that I was going to present an interesting paper. This is an example of asymmetric information: he has not seen the paper and I have. I have been selected to give the keynote speech, and you all know two things about such a talk: the first is that the speaker is required not to say very much but to say it in an inspiring manner. The second is that the word "keynote" comes from the ugly sound that is heard at the beginning of an orchestral performance; it is sounded so that afterwards, others can begin to make beautiful music. That is what I trust we will have here in the next two days.

One last preliminary remark: I have just realized how long-standing has been my association with the groups participating here – my work with the Mattei Foundation, and even earlier, as writer of the Constitution for the AERE and its second President. But that is just prehistory.

The subject of my talk this morning is the environment under capitalism and other economic systems. I think it is a subject that has not been spoken of in quite this way before, and I hope, even though I will be going over much familiar ground, that there will be elements that bring up new ways of thinking about the issue.

In some sense my talk is a message of hope in the long run for the environment and of help for the environment from unexpected quarters which we, who care about the matter, must work to promote and continue. Yet, the tale I will tell is a very sad story, only offering a glimmer of promise of a happy ending.

History does indeed tell us a sad story about the environment. Recent centuries offer three types of economic regimes: the feudal society, capitalism, and Marxism. And, if you think about it, what is remarkable is that each of them is worse than the others in

terms of its environmental performance. There just have been no economic systems that were kind to the environment.

The medieval indifference to filth has been somewhat exaggerated. Most people do not realize, for example, that it was only in the renaissance and later periods that bathing ceased. In the Middle Ages nude, mixed-sex bathing was a common and very much enjoyed activity until the church decided to intervene and going around dirty became fashionable.

Still, feudal society was not noted for tender, loving care for the environment. For example, the reign of King Edward III of England (this is before the One Hundred Years War in the 14th century) there were many attempts to pass environmental legislation, believe it or not. Most of them quite clearly were failures. Let me just read you a brief passage, an excerpt from one of those pieces of legislation of about 1370: “Edward, by the grace of God, etc.... greeting. Forasmuch as we are for certain informed that rushes, dung, refuse and other filth and harmful things are daily thrown into the water of Thames, so that the waters...are so greatly obstructed and the course of said water so greatly narrowed that great ships and vessels are not able, as of old they were wont, any longer to come up to the same city...”.

Think about that: a remarkable passage. It says that so much garbage was thrown into the river in London that what were then called great ships, about the size of lorries today, could not manage to go up the Thames River to London.

This was medieval care of the environment. It continued on a similar track all the way to the Industrial Revolution. For example, a report of 1700, once more on London, tells us “...in case there be no wind and especially in Frosty Weather, the City is cover'd with such a thick *Brovillard* or cloud which the force of the Winter Sun is not able to scatter; so that the inhabitants thereby suffer under a dead benumbing Cold, being in a manner totally depriv'd of the warmths and comforts of the day.” (Timothy Nourse, *Campania Felix*, London, 1700 p. 352). So smoky, so filthy was the air that in the winter the sun could not penetrate and warm up the city.

I can go on with citation after citation. But then, a century later, when capitalism burst forth we know it did very little better. We know of the filth pouring forth from the infamous satanic mills of the North of England. We need only to look around us to see the distressing evidence of the profound damage to our world done by proliferating

industry and we all are aware of the obvious explanation that has already been given this morning: the well-grounded analysis of market failure. It entails primarily Pigou's externalities analysis, which tells us that private enterprises will tend to overproduce any activities whose private costs are lower than their damage cost to society. But there is an even stronger force that the story overlooks, and that is the role of competition. Because it is competition, a mechanism to which I will return later, that leaves entrepreneurs, businessmen, with little alternative than to pollute and damage the environment as much as they are not prohibited from doing. We know that an active, effectively competitive market prevents all wasteful behavior, where wasteful is defined as "not money making." So competition tends to prohibit support of the arts, support of the environment and support of other such forms of waste which make life worth living. Competition, therefore, gives businesses no freedom to act in a way that preserves the environment. Competition punishes any pro-social act as waste and does so without mercy and without quarter. I will return in a moment, because it is key to the end of the story, to the free market's performance.

But I will contrast it briefly with the records of the late lamented Soviet Nations where, supposedly, market chaos was to be ended and industries were alleged to be directed to the benefit of the entire society. Because it is there, and in other Communist states that we find the most startling tale of destruction of the environment. Where else has a sea of the size of the Aral been reduced by human action to less than half of its former size in less than a century? Where else has the air, the soil and the water near industrial plants been poisoned so effectively? Life expectancy in the Czech Republic became the lowest in the industrial world. Poland is still one of the world's most polluted countries: 11 percent of its land on which 35 percent of its population lives has been declared ecologically hazardous. China continues to have some of the world's worst air pollution, almost no control devices and urban smog levels three times as high as those even in America's Los Angeles, which is, of course, the model city for the world in terms of undesirable air quality.

Here, too, the explanation seems straightforward: those who run such centrally directed societies seek from the economy the resources of power and strength, strength that derives from material production. So that the incentives built into Marxist economies reward naked production and force everything else to be sacrificed. What we have got then is this: all the economic forms we know, whether medieval or capitalist or socialist, are dangerous to the health of the environment. There seems to be no exception and the question then is: is there no hope?

I will now argue the contrary: there is, I believe, a profound source of hope and this hope comes from another feature of the structure of the very capitalist economy that poses so serious a threat to the environment. I will argue, contrary to standard micro theory, but in accord with observation and common sense, that capitalist efficiency is not to be found in its stationary equilibrium attributes but, rather, in its growth engine. If its externalities and monopolies are taken as exceptions, the Arrow-Debreu theorems assure us that in a stationary sense the market economies achieve some approximation to optimality. In contrast, we are told, the spillovers that characterize innovation impose a severe handicap upon the efficiency of the free-market growth process. But reality seems to tell us otherwise – to suggest that capitalist growth far outperforms its static efficiency. So far as the issue under discussion here is concerned, there are two features of capitalism that are really special: one is consumer sovereignty and the other is a mechanism that has created a growth record that is totally unparalleled in human history. The capitalist record of growth is so extraordinary compared to any alternative society that was ever known, that it is literally difficult to comprehend. No one expressed it more clearly than Marx and Engel themselves, who said that the capitalists cannot exist without constantly revolutionizing the instruments of production.

“[The bourgeois society] has been the first one to show what man’s activity can bring about. It has accomplished wonders far surpassing Egyptian pyramids, Roman aqueducts and Gothic cathedrals. It has conducted expeditions that put into the shade all former Exoduses of nations...” (*The Communist Manifesto*, 1847).

The market economy has its share of well-recognized shortcomings. It invites inflation, it creates unemployment, it produces inequality, it destroys the environment. But it also produces abundance and growth such as the world has never known. Let me just give you some illustrations: in England in the 18th century the world’s then richest nation, as best one can estimate these things, per capita income was approximately at the same level as it was in the 3rd century Rome. Zero growth between the 3rd century and the 18th century. True, it declined between the 3rd and the 9th century, and then grew at a microscopic pace after that, but still it averaged zero growth for 15 centuries.

Since then, output per hour in the US has grown by some 2000 percent and per capita income by much more than 1000 percent; and in Italy growth was far more rapid than that. In the 18th century, if a Roman had gone into the home of a wealthy Englishman the only new products that he would have found were clocks, guns, eyeglasses and

window glasses and paper. And that was all. Contrast that with the flood of products of the last century: TV, jet airplanes, electronic computers, calculators, cellular phones, and all the other, occasionally barbaric, instruments of progress. This flood of abundance is no accident: it is a product of free market mechanism. It has occurred over and over again in the free market economies, but it had not occurred in a single pre-capitalist state and it has not occurred in a single non-capitalist state today. In other words, the one, the prime accomplishment, if you wish, of the free market economy, is this incredible, unprecedented, unparalleled record of abundance and material growth. And it occurred because, as Marx and Engels emphasized, the competitive mechanism enslaves the capitalist as much as everyone else, makes him a tool of history, of which he is but one of the wheels (and again I'm quoting Marx). It forces him to keep ahead of all his competitors in producing the latest innovation, the latest increase in productivity, the latest of new products, and of course his rivals, each and every one of them, is required to do the same.

So the result has been that innovation, instead of being left to be inspired, instead of being driven by apples falling on someone's head, or someone seeing the water rising in the bathtub, is now commercialized, routinized, trivialized, and made more effective than ever.

Now, what this means is that per-capita incomes in our countries, in Italy, in France, in Germany, in the United Kingdom, in Japan, in the US, in Canada, have reached levels that none of our ancestors could have imagined. Just one figure: it is estimated, corrected for inflation, that in 1870 the average *real* per capita income of an American was one ninth of what it is today. That is a number I do not understand, and I dare say no one in the audience does, because we cannot imagine what it would be like to live with one ninth of the purchasing power that we have today.

Now, what has this to do with the environment? The answer is everything, because of the second feature of our economy, which is that ultimately business management, being driven by the competitive market is ultimately steered by consumers, just as politics is driven by voters. And what we find is that as abundance increases, as people cease being hungry, cease going around naked, cease having no houses, they begin to think about the environment. For the first time in history we find environment appreciated not only by few poets and few romantics. Rather it has become a powerful political issue. This represents an opportunity for environmentalists that does really offer promise; but it offers promise only if it is carefully nurtured and supported and

directed. Just two years ago, as most of you may have read in the newspapers, the Congress of the US, having been taken over by the extreme right wing, undertook to find ways to cut waste, reduce the budget and save taxes for the wealthy. It decided that two natural targets, two clear examples of waste, were the Arts and the Environment. They proposed to emasculate the Environmental Protection Agency, to eliminate all but token funds, and do you know what happened? Suddenly those reactionary Congress people discovered that their constituencies back home did not agree with what they proposed to do. They wanted lower taxes; they wanted lower expenditure, but not at the expense of the environment. And suddenly this effort by the Conservative Congress evaporated, it disappeared. And it disappeared not by accident. In my view it disappeared because of the double influence on which I have focussed. Rising income has given to humanity the scope, the power, the leisure to demand things beyond food and clothing, to look at the world in which we live and to recognize that failure to protect the environment has serious consequences not only aesthetic but for health, for safety and for many other purposes. I believe that this is happening not only in the US but also in the wealthy societies of Western Europe, Japan, and elsewhere. I have spent a lot of time, as some of you know, looking up the data on the convergence hypothesis, and what we see is historical graphs in which GDP per capita in the US continues to grow and Italy, France, Germany and the others come closer and closer, approaching the U.S. levels asymptotically.

And all this means not only that we will be able to afford to protect the environment. I need hardly to convince you of that. I'm sure everyone in the audience believes the contrary, that we can't afford not to protect the environment. But it can at the same time offer us the legions, the armies of supporters that we will need to put the teeth into the measures you and I are advocating and have been advocating for so long.

The analysis I have described, however, does just a little more than just offering hope by telling us about the existence of a mechanism that offers such hope. It also directs our attention to the means that we can employ to facilitate the process and to improve the likelihood that we can hold back those reactionary forces that seek to pursue what they call "progress", and in doing so are prepared to sacrifice the world in which we live. Together we will produce, I believe, a lot of theory, in which we are all engaged, as Dr. Siniscalco's slides showed. I also think that, together, we will produce effective applications of such theory that will enable the world to protect its environment more efficiently, more effectively and more thoroughly. I look forward in the next two days for much rich material of that crucial sort to emerge. Society may yet find itself heavily

indebted to this group and to others like it for their contributions to a better future. But the battle has only just begun.